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ABSTRACT

This volume discusses the major options decisionmakers face when they are dealing with teacher career and remuneration policies. The document deals with a central question: how can remuneration and managerial policies help improve teacher effectiveness? The book is divided into three parts containing 15 papers. The first part, "The Cost and Effectiveness of Teachers," has two papers: (1) "Teacher Costs and Teacher Effectiveness in Developing Countries" (Joao Oliveira and Joseph P. Farrell) and "International Lessons for School Effectiveness: The View from the Developing World" (Joseph P. Farrell). The second part, "The Economics of Teacher Remuneration Policies," includes: (3) "Factors Affecting Teachers' Salaries" (Manuel Zymelman with Joseph DeStefano); (4) "Teacher Compensation in Developing Countries" (Alejandra Cox Edwards); (5) "Influences on the Choice of a Teaching Career: An Analysis from an International Perspective of the French Experience" (Francois Orivel and Jean Perrot); (6) "Social and Economic Aspects of Teaching in the United States" (Alan P. Wagner); (7) "A Comparison of Teachers' Salaries in Japan and the United States" (Stephen M. Barro and Joe W. Lee); (8) "Primary School Teachers' Salaries in Sub-Saharan Africa" (Manuel Zymelman with Joseph DeStefano); (9) "Economic Incentives To Improve Teaching" (Richard J. Murnane); and (10) "The Role of Local Communities in Teacher Incentive Systems" (Frances Kemmerer and Sivasailam Thiagarajan). The third part, "Training and Managing Teachers," contains the following papers: (11) "Teacher Evaluation: A Critical Review and a Plea for Supervised Reflective Practice" (F. Michael Connelly); (12) "Teacher Training in Developing Countries: Lessons from Research" (Beatrice Avalos); (13) "Participatory Approaches to Teacher Training" (Sheldon Shaeffer); (14) "Three Scenarios for the Future of Teaching in the United States" (Arthur Wise); and (15) "The Concerns of Teachers' Unions for Quality Education in Developing Countries" (Pai Obanya). (LL)

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Economic Development Institute
of The World Bank

Teachers in Developing Countries

Improving Effectiveness and Managing Costs

Editors
Joseph P. Farrell
João B. Oliveira

with the collaboration of
Suzanne L. Brown and Bernadette Etienne

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EDI SEMINAR SERIES

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EDI Seminar Series

Teachers in Developing Countries

Improving Effectiveness and Managing Costs

Editors
Joseph P. Farrell
João B. Oliveira

with the collaboration of
Suzanne L. Brown and Bernadette Etienne

The World Bank
Washington, D.C.

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CONTENTS

Foreword *v*

Overview *1*

Part I: The Cost and Effectiveness of Teachers *5*

1. Teacher Costs and Teacher Effectiveness in Developing Countries *7*
   João Oliveira and Joseph P. Farrell
2. International Lessons for School Effectiveness: The View from the Developing World *25*
   Joseph P. Farrell

Part II: The Economics of Teacher Remuneration Policies *39*

3. Factors Affecting Teachers' Salaries *43*
   Manuel Zymelman with Joseph DeStefano
4. Teacher Compensation in Developing Countries *53*
   Alejandra Cox Edwards
5. Influences on the Choice of a Teaching Career: An Analysis from an International Perspective of the French Experience *67*
   François Orivel and Jean Perrot
6. Social and Economic Aspects of Teaching in the United States *75*
   Alan P. Wagner
7. A Comparison of Teachers' Salaries in Japan and the United States *97*
   Stephen M. Barro and Joe W. Lee
8. Primary School Teachers' Salaries in Sub-Saharan Africa *113*
   Manuel Zymelman with Joseph DeStefano
9. Economic Incentives to Improve Teaching *137*
   Richard J. Murnane
10. The Role of Local Communities in Teacher Incentive Systems *145*
    Frances Kemmerer and Sivasailam Thiagarajan

Part III: Training and Managing Teachers *157*

11. Teacher Evaluation: A Critical Review and a Plea for Supervised Reflective Practice *159*
F. Michael Connelly

12. Teacher Training in Developing Countries: Lessons from Research *175*
Beatrice Avalos

13. Participatory Approaches to Teacher Training *187*
Sheldon Shaeffer

14. Three Scenarios for the Future of Teaching in the United States *201*
Arthur Wise

15. The Concerns of Teachers' Unions for Quality Education in Developing Countries *207*
Pai Obanya

FOREWORD

Teachers are the most important resource in education programs. To ensure the best possible quality in the teacher work force, the policies implemented by government ministries must take into account the interplay of certain critical variables that influence teachers' careers. These variables include preemployment training, recruitment, remuneration, and personnel development.

This book summarizes a wealth of information on the major issues related to the structuring and management of teachers' careers. The chapters were originally prepared as background papers for a seminar organized by the Economic Development Institute (EDI) of the World Bank and held in Washington, D.C., in April 1987. The materials were then revised to include the contributions by seminar participants as well as new data on some of the topics discussed. Since that time EDI has continued to organize regional seminars throughout the world on these critical issues.

This is not a book of prescriptions. It presents a range of views by academics, practitioners, decisionmakers, and union leaders. It discusses issues from the perspective of both developed and developing countries and highlights the similarities and differences between them. The book provides practical information and useful analytical tools to help governments and teacher organizations rethink their national career policies and to make the best possible use of increasingly scarce economic resources.

Amnon Golan, Director
Economic Development Institute

OVERVIEW

This volume discusses the major options decisionmakers face when dealing with teacher career and remuneration policies. Most of the papers were prepared for a seminar on teacher costs and effectiveness organized by the Economic Development Institute of the World Bank in Washington, D.C., in April 1987. Participants holding senior posts represented countries from all regions of the developing and the developed world and contributed their views and experience. Like the seminar, the book does not attempt to present ready-made solutions to the complicated and unique problems each country faces. It does, however, attempt to raise common issues and examine the most critical policy choices related to improving the performance of education systems.

Some issues are unique to developing countries, as Farrell points out (chapter 2). Many problems, however, are shared equally by the industrial countries, so a few papers analyzing the situation in the industrial countries are also included.

The book deals with a central question: how can remuneration and managerial policies help improve teacher effectiveness? Three major lessons emerge from the experience of wealthier countries such as France, Japan, and the United States that seem to be valid for the developing world as well.

- To retain a good teaching force, countries must make sizable investments. As teacher salaries constitute from 80 to 98 percent of education budgets in most developing countries, tight management of teacher career and remuneration policies becomes crucial. This includes policy, administrative, and managerial decisions related to teacher education, recruitment, selection criteria, on-the-job training, promotion, and remuneration.
- In most countries teacher shortages are directly related to decreasing salaries. Most countries face heavy financial and institutional constraints that result in teacher remuneration policies inconsistent with market rules and realities. Qualified teachers will abandon the profession if remuneration policies differ significantly from what these same teachers would make in other jobs. By the same token countries may spend more than necessary if they systematically ignore market forces, as shown in the case of some African countries (chapter 3). Thus, special attention should be paid to market indicators, and flexibility should be built into remuneration policies to allow countries to correct distortions.
- Motivating the teaching force and providing monetary and nonmonetary incentives for teachers to improve their performance is a matter of concern regardless of a country's level of development. Such incentives may range from typical salary raises and merit pay bonuses to low-cost or cost-free rewards, such as public recognition or working-hour flexibility. If monetary incentives are crucial for recruiting the teaching force,

nonmonetary mechanisms can be even more important for retaining qualified teachers and improving their performance and overall effectiveness in the classroom.

Economic and administrative policy decisions to increase efficiency and flexibility in the use of scarce resources may include some of the following:

- Establishing adequate compensation for teachers to attract the best-qualified individuals without under- or overpaying;
- De-linking teacher salary schedules from those of other civil servants and creating conditions to make teacher remuneration policies more sensitive to market forces;
- Abolishing automatic rules that guarantee teaching jobs to all graduates of teacher training institutions;
- Revising and adjusting criteria related to career differentiation, entry-level requirements, and pacing of promotion based on seniority;
- Creating adequate incentive systems, including individual or group merit pay schemes;
- Revising and increasing the array of nonmonetary incentives;
- Changing the emphasis from pre-employment training to supervision, in-service, and on-the-job training;
- Creating alternative organization structures in which principals or other more qualified teachers perform supervisory functions and in-service training;
- Creating a better balance in the mix of inputs available for teachers, including the provision of minimum instructional materials to make teaching more effective;
- Considering the introduction of pedagogic and organizational changes to expand the amount of time teachers spend on instructional tasks and the use of peer tutoring and collaborative learning to allow increases in class size.

The book is divided into three parts. Part I has two chapters. The first chapter summarizes the book's main conclusions. It discusses the meanings of teacher effectiveness and presents an overview of the economics of teaching. It then analyzes the implications of alternative career patterns and policies in terms of costs and effectiveness. The second chapter summarizes international research and experience on teacher effectiveness and draws conclusions that have particular relevance for developing countries.

Part II attempts to respond to the central question of the book: how do teacher incentive systems contribute to teacher effectiveness? Salary scales are a statement of policy on remuneration by which the salary of any teacher is determined in accordance with his or her qualifications. Chapter 3 discusses the economic, political, and individual criteria that influence such scales. The two major criteria most commonly used are level of qualification and years of experience. Unified salary schedules attempt to relate teacher qualification to teacher performance. Conceptual underpinnings of alternative schemes such as merit pay or subject-differential pay scales are also discussed.

Chapter 4 analyzes a general framework for understanding the macro- and microeconomics of teacher remuneration. Assessments of teacher salaries as either high or low can be made only in relation to current market prices. Chapters 5, 6, and 7 discuss existing teacher remuneration policies in the context of the industrial countries. Issues policymakers in these countries face are identical to those they face in the developing countries: how to set remuneration levels, how to bolster teachers' motivation, and how to improve the attractiveness of teaching careers. The best available data on teacher remuneration policies in developing countries are presented in chapter 8, which draws from the experience of twenty-two countries in Sub-Saharan Africa. The study points out the crucial role of salary scale structures, examines the present distribution of the teaching force, and discusses implications of the growth rate of education systems in determining its future costs.

Even though problems and their causes are strikingly similar in countries at different stages of development, solutions are not, particularly in countries facing a tremendous shortage of

qualified teachers and resources. The methodologies and findings presented in these papers should help increase the effectiveness of educational planning and encourage the design of specific solutions for dealing with the problem of reducing average teacher costs while maintaining or improving educational quality in developing countries.

Part II also discusses alternatives to conventional solutions to teacher remuneration. Chapter 9 examines the concepts of merit pay and subject-matter differential pay. The author reflects on the U.S. experience (the only available source of data on these topics), describes the existing systems, analyzes their drawbacks, and suggests ways in which such schemes could be successfully implemented in developing countries. The final chapter on the economics of teacher remuneration policies introduces an array of nonmonetary rewards commonly used in developing countries. Even though there is no evidence about the effectiveness of such incentives in specific school systems, these strategies are used extensively. They might be useful, cost-effective components of carefully designed, financially affordable, and politically feasible teacher remuneration policies.

Part III attempts to answer the following question: how do organization, management, and training contribute to teacher effectiveness? Teacher education is expensive in two major ways: it requires heavy investments over relatively long periods of time, and it is directly related to the entry-level requirements for teachers. The issue, then, is how to establish optimal tradeoffs between general and specialized teacher education. How much should be invested on pre-service, in-service, and on-the-job training? Different analysts propose different, but not mutually exclusive, views on this issue. Chapter 11 reviews the literature on teacher effectiveness and argues that sound criteria for entry of teachers into the profession will yield greater educational dividends than time consuming, labor-intensive evaluation of samples of actual teacher performance. This view is shared by other authors who approach effectiveness from different perspectives. Chapter 12 discusses the relative failure of traditional attempts to improve teachers through conventional training. The main conclusion is that efforts to foster effectiveness would be more productive if they used a teacher's awareness and reflection as the starting point of training efforts. In other words, teachers should be the originators of and active participants in the design and implementation of teacher training activities. Chapter 13 illustrates the kind of alternatives mentioned in chapter 12. Despite the shortcomings of such alternatives—namely, that they are time consuming, labor-intensive, and often in conflict with political, bureaucratic, and cultural circumstances—the author suggests that they are still more effective than the conventional approaches.

No policies will ever be implemented without the full participation of teachers. The nature, rules, and dynamics of such participation varies in each country. Two examples are illustrated in the book. Chapter 14 presents the rationale for a professional scenario in the United States and calls for the professionalization of teachers. Substantial changes are proposed for training, remuneration, and management of teachers at the school level. Chapter 15 describes how a teachers' union in Kenya has assumed a leadership role in the professionalization of its members. Recent research evidence suggests that teachers' decisions regarding teaching practices are less related to their prior education or experience than with school-level management factors. These papers suggest that highly professionalized teachers or school principals can improve both the efficiency and quality of their school systems without great investments or major cost increases.

Part I:

The Cost and Effectiveness of Teachers

The first chapter in part I summarizes the book's main conclusions by outlining major issues and respective conclusions as well as policy implications regarding teacher costs and effectiveness. The second chapter outlines the effectiveness-efficiency crisis the developing world is facing and the ways in which much thinking and some practice is being reoriented to try to deal with that crisis.

The first issue discussed by Oliveira and Farrell in chapter 1 is the definition of teacher effectiveness. *Teacher effectiveness* refers to the value added to learning within the teaching process. Testing systems can overcome difficulties usually associated with standardized testing and can, therefore, measure learning.

The chapter next considers the topics of teacher remuneration and the economics of teaching. Regarding the issue of teacher remuneration, Oliveira and Farrell believe that teachers should be paid as much as is necessary to attract and maintain people with the desired qualifications. Market forces should be taken into consideration when determining salary. Regarding the issue of whether to pay the individual or the job, the authors state that it is easier to pay the job. Individual merit pay systems and differential pay systems have theoretical, but not practical, advantages. Systems that reward groups of teachers or entire schools might, however, be successful.

Chapter 1 also discusses teacher training, supervision, and control. How much should be invested in pre-service as opposed to in-service and on-the-job training? Higher requirements for pre-service training lead to higher initial salaries and risks of losing trained personnel. On-the-job supervision by principals and in-service training may lower training costs and total payroll without affecting student performance. Teacher involvement and participation in the design and delivery of their own training programs can contribute to enhancing the relevance and effectiveness of training schemes.

Alternatives to bureaucratic supervision and control are examined next. Should there be bureaucratic supervision or professional control? Although there has been little relevant research in this area, some alternatives can be enumerated. One alternative to bureaucratic supervision and control is to increase the level of professionalization of teachers, thus permitting peer-group regulation and self-regulation. Another alternative is to introduce staffing differentiation.

Balancing human and physical resources is the next area considered. What constitutes the optimal mix of human and physical resources to increase school effectiveness? Oliveira and Farrell suggest that achievement can be greatly enhanced by increasing the availability of basic inputs such as textbooks and basic instructional materials. Other alternatives include increasing instructional time and class size by using differentiated staffing practices and interactive radio programs. Resources for nonteacher expenditures would help to improve this alternative. Organizational change might also improve achievement, although successful

implementation of organizational change requires active participation by teachers, teachers' organizations, and unions.

The second chapter summarizes international research and experience on teacher effectiveness and draws lessons that have particular relevance to developing countries. In the past few decades the industrialized countries have seen a huge increase in the availability of formal schooling and a concurrent increase in the amount of money invested in education. The international financial crisis has hit most nations hard. This means that the educational expenditure per student in poor countries has declined, while in rich nations it has risen. Consequences of this include low teacher salaries and low per-pupil expenditures. These conditions produce low levels of learning in developing nations compared to rich nations. Test scores of children from low- and middle-income countries are lower than those of children of comparable age or grade in industrialized nations.

Any measures taken to improve school effectiveness in poor countries must be found within the existing educational budget. Any definition of effectiveness, therefore, must include cost-effectiveness. An effective school fulfills certain learning requirements; produces good citizens; and promotes self-esteem, learning how to learn, advanced thinking skills, problem solving, and decisionmaking. The effectiveness of various schooling alternatives must be considered in relation to their cost. Total learning output must be increased without increasing total system costs.

Out-of-school factors have a great influence on students' academic achievements. The poorer a nation is, the greater the influence on academic performance of school-quality factors; the richer a nation is, the greater the influence of student socioeconomic status. In the developing world, even the smallest improvements in school quality have the potential to produce important increases in student learning. Factors that influence student achievement include texts and reading materials, library size and activity, years of tertiary and teacher training, and length of instructional program.

1

TEACHER COSTS AND TEACHER EFFECTIVENESS IN DEVELOPING COUNTRIES

João Oliveira and Joseph P. Farrell

Education is a costly enterprise. Developing countries typically spend from 15 to 35 percent of their national budgets on education, and yet their educational systems are often inadequate. At the same time, the present world economic crisis is forcing many countries to make dramatic adjustments in public expenditure. Thus, it is unlikely that developing countries will be able to increase their educational budgets in any significant way. Expansion and quality improvements will be possible only through more efficient allocation of the scarce resources already available.

Teachers' salaries represent the single most costly item, generally accounting for 65 to 95 percent of the educational budget in developing countries. In many of these countries, teachers represent the largest employment sector, and in virtually all the countries they are the largest group of public employees. While a few developing countries have been able to pay their teachers reasonable salaries, most underpay teachers. Consequently, the educational sector is unable to attract qualified personnel. Some countries have had to lower entrance requirements to make salaries minimally acceptable. The situation is critical in rural areas where it is more difficult to attract and maintain adequately qualified teachers. Since teacher remuneration policies are either national or regional and are generally tied to national civil service standards, any change in pay substantially affects the resources available for other items in the educational budget.

Schooling requires (at a minimum) buildings, furniture, educational equipment and instructional materials, teachers, support staff, administrative services, and research and training capabilities. The lack of any of these may render educational service ineffective. There is considerable evidence to indicate that in developing countries, provision of a minimum amount of instructional materials (notebooks, pencils, chalk, textbooks) can have a substantial impact on student performance. The poorer the country and home environment of students, the larger the impact of those resources on student learning. Even relatively untrained teachers can produce better results when these resources are available. Yet whereas these resources cost no more than 1 to 5 percent of national educational budgets, most countries have not been able to allocate sufficient funds for them, and as a result, teachers cannot perform adequately. This chapter summarizes the major policy issues and tradeoffs policymakers face when dealing with teacher remuneration and pay scales.

Policy Implications

The major conclusions and policy implications stated below are briefly discussed in subsequent sections and dealt with in more detail in later chapters.

Teacher Effectiveness and Teacher Evaluation

Issue 1: Is it possible to define and measure teacher effectiveness?

- At the simplest level, what students learn is the basic output of schooling.
- Teacher effectiveness properly refers to the value added to learning due to the implementation of the teaching process.
- It is technically possible to develop testing systems that overcome difficulties commonly associated with the use of standard tests to measure teacher performance. Adequate tests can provide useful feedback to teachers and administrators about teacher and school effectiveness.

Teacher Remuneration and the Economics of Teaching

Issue 2: How much should teachers be paid?

- A simple way of answering is to say that teachers should be paid as much as is necessary to attract and maintain people with the desired levels of qualification.
- Even in nonmarket societies, market forces operate to determine the attractiveness of teaching careers. Being dynamic, such forces change over time depending on supply, demand, and other nonmonetary incentives. Hence, there is a need for flexibility to manage career policies effectively.

Issue 3: Pay the individual or the job?

- In practice, it is both politically and administratively easier to pay the job rather than the individual. Salary scales are typically established on the basis of formal education and years of service. Thus, defining what such formal requirements are and the pace of career advancement have strong implications for the supply of teachers, the level of pay, and the total salary expenditures.
- Individual merit pay systems and differential pay according to subject matter have theoretical advantages that have not yet been found in practice. Provisional differential pay rules and alternative incentive systems that reward groups of teachers or entire schools rather than individuals have been found to be more acceptable by teachers' unions and to encourage cooperative work among teachers, which is essential for a positive school climate.

Training, Supervision, and Control

Issue 4: How much should be invested in pre-service as opposed to in-service and on-the-job training?

- Empirical evidence does not show a consistent relationship between years of formal education, teaching practices, and student performance. Other factors such as school leadership and local supervision seem to play a more important role.
- Higher requirements for pre-service training lead to higher initial salaries and higher risks of losing trained personnel. On-the-job supervision by principals and in-service training coupled with effective school-based management may constitute viable alternatives to lower both training costs and total payroll, without necessarily affecting student performance.
- Teachers' involvement and participation in the design and delivery of their own training programs can contribute to enhancing the relevance and effectiveness of training schemes.

Alternatives to Bureaucratic Supervision and Control

Issue 5: Should there be bureaucratic supervision or professional control?

- There is no evidence about the effectiveness of typical formal supervision and school inspection practices.

- One alternative is to increase the level of professionalism of teachers, thus creating the conditions for the exercise of peer-group regulation and self-regulation.
- Another alternative is to introduce staffing differentiation, whereby principals and other fully qualified teachers supervise the training and the actual performance of less qualified teachers and para-professionals.

Balancing Human and Physical Resources

Issue 6: What is the optimal mix of human and material elements to increase school effectiveness?

- Experience and empirical evidence show how achievement can be greatly enhanced, particularly in developing countries, by increasing the availability of basic elements, such as textbooks and basic instructional materials.
- Other attractive, cost-effective alternatives consist of increasing instructional time and increasing class size with the use of peer-group techniques and differentiated staffing practices.
- Educational technologies such as interactive radio can also help compensate for the inadequacy or unavailability of trained teachers.
- As a consequence, providing resources for nonteacher expenditures is essential to guarantee the minimum resources necessary for teacher effectiveness.

Organizational Change

Issue 7: What are the critical ingredients of successful implementation?

- The participation of teachers and teachers' organizations and unions is essential for the effective implementation of educational change, particularly the policies that directly affect teachers.

Teacher Effectiveness and Teacher Evaluation

In spite of a substantial body of research carried out in the United States, the concept of teacher effectiveness is hard to pin down in terms of concrete policy options. At the simplest level, what students learn is the basic "output" of schooling. The more students learn in a given time, the more "effective" is the teaching to which they have been exposed.[1]

We know, however, that students differ widely in both ability and motivation to learn. With some, a lot of highly skilled teaching will produce only small learning gains, while others will learn a great deal, even despite poor teaching. We also know, moreover, that children learn a lot before they go to school and that children from privileged backgrounds enter school having acquired more of the knowledge valued in schools than have less privileged children. We also know that while at school, children learn from their out-of-school experience, and again privileged children have more out-of-school learning resources available to them than do poorer children. Evidence from industrial countries shows that out-of-school learning accounts for more of the variation in students' test scores than does school learning.

By contrast, in developing countries schools and school characteristics have greater weight, but out-of-school learning is still important. It is to the "value added" to learning by the efforts of the teacher that teacher effectiveness properly refers, namely, to that portion of learning gains that can reasonably be attributed to the teaching process itself. Within this concept of

1. The context in which teacher effectiveness is defined and evaluated is discussed in the chapters by Farrell and Connelly. The present discussion draws also upon ideas discussed elsewhere, particularly by Beeby (1986); Clandinin and Connelly (1986); Darling-Hammond (1986, 1989); Fuller (1985); and Lockheed (1987).

effectiveness, a teacher whose students produce high test scores but who teaches privileged children may be less effective than a teacher whose students score lower on tests but who have fewer out-of-school learning resources available to them.

The difficulty in isolating the unique effect of the teacher's efforts on student learning confounds much of the research on teacher performance. The issue goes beyond research method, because insofar as many of the variables influencing how well students learn are outside the teacher's control, teachers resist having their performances judged on the basis of student test scores.

There is a further difficulty in using tests of student performance to assess teacher effectiveness. In all societies, the range of learning goals assigned to schools is very wide. Yet, we know how to test for only a few of those learning goals. For example, an almost universal goal assigned to schools and teachers is to produce "good citizens," an outcome particularly important in many new nations whose populations are often bitterly divided along class, racial, ethnic, or religious lines. It is difficult, however, to conceptualize, let alone measure, learning outcomes related to this goal. Even in subject areas where there is an international tradition of testing, most tests measure only lower order conceptual skills, such as immediate recall of isolated bits of information. Under these circumstances, the use of standard tests to assess teacher effectiveness induces teachers to (a) concentrate their efforts exclusively on the subject areas in the test, and within those subjects, to work only on developing the lower order skills that the tests measure; (b) concentrate on teaching middle-level students (since slow learners are difficult to teach and highly able students learn without much intervention); and (c) encourage slow learners to leave school before the testing date, so that their predictably low test scores do not pull down the class average. All these counterproductive reactions to the use of standardized tests to measure teacher performance are well-documented in the literature. It *is* technically possible to develop testing systems that overcome these problems and that provide useful feedback to teachers and administrators about teacher and school effectiveness, but these systems are expensive, require a high degree of technical skill to implement, and are administratively difficult to sustain. Expert advice should be sought before attempting to develop such a system.

Teacher Remuneration and the Economics of Teaching

The teaching profession has both similarities to and differences from other categories of workers. There are a few characteristics associated with teacher salaries that constrain the extent to which monetary wages reflect market realities: the sector is highly unionized and dominated by public sector employment; fringe benefits of a monetary and nonmonetary nature tend to be more significant than in other occupations; and in some countries, working conditions such as overcrowded classrooms, unsafe schools, lack of adequate teaching materials, or social isolation may contribute to making teaching less attractive than other occupations. As a consequence, monetary wages are only one dimension of the total compensation package and cannot be directly compared with those of other professions requiring similar levels of formal education.[2]

In a free market, wages are determined by the interaction of demand and supply. The supply and demand for teachers, even in highly market-oriented societies, is slightly different from that for other categories of workers, thus affecting the establishment of the equilibrium wage that ensures efficient allocation of the labor force. Demand for teachers is closely correlated to population trends and the coverage of the educational system. Supply is not necessarily tied to the number of newly graduated teachers.

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2. Hanushek (1986) presents a general overview of the issues related to the economics of schooling, Murnane and Cohen (1986) discuss the merits of merit pay, and Fogarty and Kemmerer (1986) and Kemmerer and Thiagarajan (1987) present several examples of nonmonetary incentives for teachers. The case of the Côte d'Ivoire (Bourguignon 1986) is one of the few empirical studies published on teacher remuneration policies.

Qualifications and minimum requirements may change, or may be changed as a result of specific policy interventions, to accommodate sudden teacher shortages, thus increasing the elasticity of demand. A recent investigation (Darling-Hammond 1989) has shown that in the United States a paradoxical phenomenon tends to occur: in times of teacher shortage (presumably because of unattractive salaries), formal requirements are increased (to justify increased salaries). Shortly after, however, states tend to increase special provisions and certification procedures to employ untrained teachers. This apparent paradox seems typical of many developing countries during the expansion of their educational systems.

Whether teacher salaries are low or high depends on how the country (or the market, for that matter) remunerates other workers. A proper evaluation would require taking into account not only salaries and other fringe benefits, but also vacancies, unemployment, and other structural characteristics.

Salary differences across countries, as a proportion of the gross national product (GNP), cannot be compared directly. As suggested by Cox Edwards (chapter 4), there is a large variation across developing countries that reflects large differences in relative productivity across sectors within countries, with a stronger productivity in the service sector. As a consequence, the financial effort in poorer countries is much higher than is required from industrial countries, where differences in relative productivity tend to decline as the labor force moves toward the high productivity sectors. Thus, it is natural that teacher salaries in developing countries represent a larger proportion of GNP per capita than in industrial countries.

Salary scales typically mirror government policies toward public civil servants. If these are low in relation to the private sector or other employment opportunities, the labor force will tend to be of lower quality. This is true of both market and nonmarket economies.

Teacher Remuneration Policies

With teacher remuneration, two broad areas of policy choice are considered: overall national levels of remuneration and differential levels of remuneration among the teaching force.

As concerns the overall level of remuneration, two major questions are salient. The first is: "What can the nation afford?" This is not simply a function of the national budget, but also of the relative priority assigned to education within that budget, ultimately a question of political judgment and political will. The second is: "What level of remuneration is required to attract people with desired qualifications into the teaching profession?" The level of remuneration includes not only teachers' take-home pay, but also fringe benefits. Qualified individuals may be attracted to teaching, even when salaries are relatively low, because it provides them with access to national medical insurance and pension schemes. The greater job security in teaching, compared to private sector opportunities, is frequently traded off by individuals against lower wage scales. Working conditions are another important aspect of total remuneration. The short working day, week, or year often associated with teaching frequently offsets low wages in individual decisionmaking.

Working conditions, however, can also be an impediment, as when overcrowded classrooms, lack of teaching materials, or the professional and social isolation of rural areas discourage otherwise qualified individuals from becoming teachers. Often high wages or special fringe benefits are needed to attract individuals to work in such conditions. Finally, social prestige is an important aspect of the total teaching reward package. Where the social prestige attached to teaching is high, qualified individuals will enter the profession even if wages are low. Unfortunately, however, as economies modernize, low wages tend to reduce the social prestige of the profession.

In this context, market forces operate in almost all societies to determine the attractiveness of teaching. These forces can be seen most clearly in free-market economies with highly differentiated occupational structures. In these circumstances, if the remuneration package is

too high, there will be a surplus of qualified applicants for the profession. There are generally market imperfections, and these can be troublesome. Teachers may have distorted salaries because they belong to a general category of civil servant or because most of the work force is female. Sometimes high salaries are a result of the strength of teachers' organizations or unions. Often in developing nations teaching is one of the few occupations available at all to individuals with a certain level of educational qualification. In such cases, there is no effective market alternative, and even low remuneration will attract qualified applicants. Remuneration can be so low, however, that qualified individuals will prefer to remain unemployed (at least in the formal economy) than to teach. Alternatively, teachers will often be absent or come to work for only a few hours a day or a few days a week. As other areas of the economy begin to develop, moreover, there is likely to be a sudden outflow from the teaching force of its most qualified members to more attractive new positions as these become available. Even centrally planned economies cannot totally escape such market constraints, because individuals will choose not to enter teacher training if the total remuneration package is too low. There are also cases where a centrally planned state has lost many of its most qualified teachers to a neighbor nation seeking to resolve a teacher shortage by offering higher wages (Barro 1985).

The policy tradeoffs related to the total remuneration of teachers are difficult to deal with in the short term. If total remuneration is judged to be too high or too low, change can usually be implemented only over a period of years, and the effect of changing market signals on individual decisions may take even longer. What is most important to bear in mind is that (a) market conditions are operating, (b) the direct salary is only one part of the total remuneration package to which individuals respond, and (c) the impact on individual decision of various parts of the total remuneration package vary from nation to nation and within a nation over time.

When it comes to remuneration differentials among the teaching force, most nations have a standard salary scale, with either national or regional coverage, set directly by the government or negotiated between the government and teachers' organizations. Ordinarily, such scales reward years of formal schooling, teacher training, and years of teaching experience, with additional salary increments for in-service training or special qualifications. All teachers with the same formal education have the same salary, irrespective of classroom performance. The great advantage of such a system is that it is straightforward, predictable, and easy to administer. To determine the rate of pay of a particular teacher, the little information that one needs is easily acquired. There is a kind of perceived equity, moreover, about such scales; everyone with the same publicly observable characteristics receives the same pay. Such a system also rewards faithful and consistent service in a generally conservative sector. A major disadvantage of such scales is that they reward characteristics that are not always clearly related to student learning gains. Some studies have found little or no difference in the achievement of students taught by primary teachers with university education and by teachers with secondary education only, although university educated teachers are paid considerably more. Similarly, in some developing countries, length of teaching experience is unrelated to differences in student achievement. An additional problem is that if one has a reasonably stable teaching force, thought generally to be desirable on pedagogical grounds, rewarding years of experience results in built-in annual inflation within the teacher salary budget. Finally, such scales do not allow one to use salary differentials to reward superior teaching.

An alternative approach is to provide precise salary differentials (usually referred to as merit pay) on the basis of teaching performance or effectiveness. There is a superficial attractiveness to this scheme, for if more effective teachers are paid more, this would presumably serve as an incentive for teachers to improve their effectiveness. There has been considerable experience with such schemes, especially in North America, and the results have not generally been satisfactory. First, for reasons already discussed, it is difficult and expensive to assess teacher effectiveness with sufficient accuracy to ensure that the differential salary system is perceived by teachers to be fair. If it is not perceived to be fair, the scheme will be

resisted or subverted. Such schemes frequently evoke counterproductive teacher behavior, because for a school to be effective, the teachers must work hard as individuals *and* they must work together cooperatively. Merit pay schemes frequently set individual teachers in competition with each other, such that they will refuse to share new ideas and successful practices they have discovered. Why should they offer their competitors an advantage? They may also compete among themselves to get the best classes or encourage slow learners to drop out of school. In most cases, when merit pay schemes have been implemented, they have quickly been abandoned, and those that have survived have no longer been based on true merit. This approach to differential teacher rewards, which in industrial nations has proven to be expensive, difficult to administer, and educationally counterproductive, is not recommended for developing nations.

It has sometimes been suggested that there should be differential pay for different disciplines. This suggestion generally arises when there is a shortage of teachers in a given discipline, most typically mathematics and science. It may make sense from a market point of view, but it creates administrative and political problems that can offset its apparent advantages. The problem with differential pay is that benefits are quickly incorporated into salaries and are very hard to change, even when the teacher shortages disappear, and if they become permanent, they create discrimination within the teaching force that is not acceptable to teachers' associations and unions. In practice, such policies become acceptable only when they are of limited duration and are applicable to any shortage, not just for a particular discipline.

A few alternative approaches to rewarding superior teaching performance have been tried on a small scale and may be worth implementing experimentally. Rather than individual teachers, an entire school might be singled out for achievement, thereby encouraging cooperative work among the teachers. Since prestige is often an important part of the remuneration package, public recognition may be as effective, if not more effective, than monetary rewards. Providing small grants to teachers who want to experiment with innovative methods has sometimes proven successful. Community-based incentive schemes are being tried in some areas. Participation by teachers themselves in the development and administration of incentive schemes has proven to be important, arguing for a decentralized approach.

Training, Supervision, and Control

It is true that teachers ought to be trained. It is not self-evident, however, what types and levels of training are most conducive to improved performance. Decisionmakers face two basic tradeoffs in framing teacher-training policies. The first relates to the balance between pre-service and in-service training and the second to the choice between more training or more supervision. Both sets of options have different costs and benefits that need to be carefully considered.

Pre-Service and In-Service Training

Pre-service training is typically a combination of academic schooling and specialized teacher training. It might include regular schools alone; regular schools and/or teacher training colleges; special teacher training institutions to complement academic training at secondary or higher education levels; or short, applied teacher training courses.

Limited research evidence suggests a few practical rules about how much and what kinds of training teachers need to perform their usual duties:

- The number of years of teachers' schooling is generally positively correlated with students' performance, but there is a limit after which additional teacher training adds no visible gain.
- The higher the level of instruction (as in secondary schools), the more there is a need for specialized subject-matter knowledge.

- Teaching skills are best learned in close contact with the realities of the classroom and under close supervision of experienced teachers.
- Short-term, structured, pre-service training is an appropriate method for preparing graduates with purely academic backgrounds.
- Most of the teaching skills that teachers use are acquired during the first five years of practice.

There are also important institutional considerations regarding the tradeoffs between professional and regular academic schools as vehicles for teacher training. From a pedagogical point of view, it is very difficult to establish whether there is a single best solution. For instance, some educational systems treat academic training separately from teacher training courses. Others combine them. In one version, normal schools are set up in addition to teacher training colleges. In another, students take regular academic courses simultaneously with pedagogical training in specialized departments. A strong argument in favor of professional teacher training is the need to socialize students into the values of the profession. A counterargument is that since students have been exposed to educational institutions for a long time already, there is no need for such a period of socialization and indoctrination; professional values could be learned on the job. In fact, there is evidence that teachers who begin displaying behaviors learned in specialized institutions eventually switch to prevailing behaviors of the school in which they are teaching (Lockheed, Fonacier, and Bianchi 1989).

Regardless of one's preference, there are costs and benefits associated with each strategy. Specialized institutions also mean earlier career decisions, and in some countries, students cannot switch courses or change their careers once they have reached a decision. In this case, individual costs of a wrong decision are high. Social costs can also be high since it is unlikely that an unmotivated teacher will perform well. Conversely, it is more likely that professionally trained individuals will perform better and remain more years in the teaching force. The cost and effectiveness of each set of choices can be assessed only according to national constraints.

Other forms of preparation for candidates from regular academic backgrounds consist of short, intensive, pre-service courses to introduce them to specific tools and teaching techniques. Often this is combined with in-service training after they start teaching. Another variant is supervised practice in the form of apprenticeship. Training combines theory, structured observation of positive role models, micro-teaching, and simulated (as well as actual) classroom practice. Yet another variant is to allocate resources from conventional supervision to apprenticeship schemes in which highly qualified teachers introduce novices into the profession.

Regardless of their level of development, all educational systems need to spend sizable sums on in-service training for a number of reasons:

- To upgrade the knowledge and pedagogical skills of poorly qualified teachers;
- To cope with graduates who lack specialized teacher training;
- To facilitate the introduction of educational reforms, curriculum innovations, new techniques, or new textbooks;
- To provide an essential component for career development, which is perhaps the most important reason of all.

Strategies and costs associated with in-service training vary tremendously. Formal education is the most expensive. Some countries send teachers to regular schools or teacher training institutions to obtain degrees, pay for their tuition and room and board, maintain their salaries, and provide substitute teachers for their regular classes while they are away. There are high dropout rates associated with this approach, particularly when trainees from rural areas are brought into institutions located in cities. There are many alternatives for training people without requiring them to move from their homes and without interrupting their work.

Both intensive programs during school holidays and weekends and correspondence courses have been widely used and have proven to be very cost-effective.

Conventional, centralized, in-service teacher training schemes can be successfully replaced by decentralized, local-level strategies. Various forms of participatory training, the creation of teacher centers, the use of teachers as researchers, and teacher self-help are all options that have been successfully implemented in a number of developing countries. The major characteristic of these projects is that teachers define their needs and participate in the design of curricula. As distinct from packaged training programs imposed from above, these training schemes are generally perceived by teachers as more relevant; consequently, they are more likely to put whatever they have learned to use in their daily activities. Such schemes are generally supported by distance teaching, and if carefully designed, they can reduce dramatically the costs of in-service training.

At some point, most countries will have to put into place a variety of teacher training mechanisms. Pre-service training is essential to teach subject matter. In-service training is essential to teach teaching skills. Thus, decisions will have to be made regarding training strategies and the costs and benefits associated with them. Less investment in normal schools and teacher training colleges requires more investment in specialized in-service training, and probably in supervision. Less pre-service training combined with several on-the-job training opportunities during the first few years of teaching practice seems to be the most cost-effective formula for improving teaching skills.

Regardless of the effectiveness of the various training strategies, highly trained teachers will eventually require higher salaries. To the extent that training systems are formalized, they are likely to introduce increased expenditures that need to be incorporated into the calculation of training costs. It is also a fact of life that rising expectations and the assimilation of the practices of more developed countries will set models for the teaching profession that will require increased levels of specialized training.

Training versus Supervision

If policymakers were to hire adequately qualified teachers and treat them as professionals, there would be less need to supervise their job performance. By definition, professionals are trained to apply independent judgment and to rely on their own discretion. Conversely, the lower their level of education, the more teachers are treated as technicians or minor bureaucrats. Consequently, there is more need to monitor their performance to ensure that they conform to a given set of behaviors and comply with prescribed guidelines.[3]

In countries where teachers are treated as professionals, educational policies put more emphasis on longer pre-service training so that new teachers are socialized into their profession by learning the values and behavior considered acceptable. In practical terms, that requires more resources for secondary and higher education and specialized teacher training institutions. Highly trained teachers also require higher salaries at entry level, but once on the job they require less supervision, thereby decreasing some of the burden on administrative, training, and supervisory budgets.

If teachers are considered to be technicians or minor bureaucrats, school systems can hire less qualified personnel (as most countries do) at a lower cost. Heavier investments are then needed on other items such as on-the-job training. This strategy also requires elaborate supervisory schemes to ensure that teachers perform adequately. There are also higher costs related to curriculum development and to the preparation of all sorts of detailed guidelines, rules, standards, manuals, and field supervision.

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3. For a general overview, see Bolan (1985); Husen, Saha, and Noonan (1978); Masagara (1983) ; Vera (1986); and Wright (1985) discuss participative approaches and teacher involvement in training. Sommerset (1983) presents an interesting discussion on the uses of students' examination results as a strategy to improve teacher performance.

Some school systems do both: they "professionalize" their teaching force by requiring high formal qualifications of applicants, but once hired, the teachers are treated as technicians. In terms of costs, this creates unnecessary expenditures. In terms of effectiveness, it tends to eliminate the better teachers, while making only limited use of the trained capabilities of the teaching force. An alternative that so far has been attempted only in industrial countries is a combination of highly trained teachers directing the work of less trained (and consequently lower paid) teacher-aides. In developing countries, this model can be compared to the use of para-professionals in health services. In some countries, team teaching has been successfully implemented, combining the skills of teachers of different ability levels.

Obviously, the cost of these different options varies, and the benefits associated with them are equally not self-evident. At some stage of development, countries will be able to afford the professionalization of their teaching force, or at least part of it. Rising expectations from teachers increase the pressure to improve salary levels. Sometimes the only politically feasible option to justify such an increase is to upgrade the educational requirements for people entering the teaching profession. To make such a proposal economically sound, however, countries need to combine increased professionalization with decreased costs and increased supervision. Whatever the circumstances, environmental support and adequate materials will always be necessary to ensure that teachers perform to the best of their ability.

Alternatives to Bureaucratic Supervision and Control

A major area of concern is the control of teaching activities and the costs and benefits associated with centralized versus decentralized supervision policies. In most countries, the mechanisms for teacher supervision and evaluation reinforce the bureaucratization of the teaching function and reflect a bureaucratic concept of teaching and teachers. Administration staff and education specialists plan the curriculum, and teachers are supposed to implement the policies planned for them. Most of the paperwork required from teachers, principals, and school personnel is unrelated to effective teaching. To the extent that teachers are treated as bureaucrats, they behave as bureaucrats. One negative effect of this type of supervision is that subordinates are unlikely to conform when supervision is absent. Given the difficulties and prohibitive costs of close supervision, teachers are unsupervised most of the time, and thus control issues are problematic. Many of the problems of education—the high rates of student dropout and desertion from school—can be attributed to lack of adequate supervisory practices. Adding more of the same kinds of ineffective control mechanisms is unlikely to improve the situation. At the same time, it is hard to imagine most developing countries being able to afford effective direct supervisory schemes.

Even though control is an essential feature of any organization, rigid bureaucratic educational policies (presumably designed to guarantee fairness in the delivery of educational services) turn out to be self-defeating. For instance, it would be inappropriate to provide the same instructional treatment to students who differ in backgrounds, needs, and aspirations. Schools and teachers need freedom to exercise professional judgment on behalf of their students. This requires a qualified work force, however, and lacking this, some form of bureaucratic monitoring instrument will have to be used. In such cases, conventional bureaucratic behavior is all that can be expected of teachers, but even poorly qualified teachers can be managed in ways that will maximize opportunities to learn from each other and to learn from their own mistakes.

Local-Level Management

Under a bureaucratic or a professional model of organizational control, there are many responsibilities in schools that can be handled more effectively at the local level by principals, teacher organizations, individual teachers, and sometimes even by the community. The responsibilities and decisions to be decentralized depend essentially on the level of

professionalization of the teachers and their power in relation to those responsible for the overall management of the school system. First and foremost, school systems have to ensure that teachers show up for work. Low salaries and poor working conditions create absenteeism, which has negative consequences for the overall effectiveness of the educational system. Paying low salaries can be a costly policy. Assuming the teachers are present and enjoy the basic material conditions, it is essential that they cover the curriculum according to a minimum set of prescriptions. Formal control instruments have proven to be ineffective at verifying what goes on in actual classrooms. Local school-made tests, locally-based supervision, peer pressure, and community participation in school affairs constitute useful managerial tools to support and improve teacher performance.

Teacher Centers and Collegial Practices

Teachers acquire much of their training through their own organizations. Teacher centers, for example, provide information and training opportunities. In general, teacher centers are organized by discipline or areas of common interest. In some school systems there are a number of collegial practices among teachers. For example, teachers decide on textbooks to use for a given discipline, series, or school; they collectively prepare examinations for their classes as a way of ensuring quality control; they decide on curricula or teaching practices; and they make arrangements among themselves for collective teaching practices (team teaching) or for specialization. Centers may also contribute to improving individual teacher practices by providing updated information on contents, methods, materials, experiences, models, and other useful tools.

Balancing Human and Physical Resources

Measures of educational productivity, such as grade repetition and dropout rates, are imperfect. More precise indicators are necessary, in particular, standardized testing and economic analysis that relates cost-effectiveness to educational effectiveness. Nevertheless, as a general observation, productivity in education has been at best steady, if not declining. It is likely to continue to do so unless major changes are introduced in the way schools are organized and managed. In most countries, major changes are unlikely. Within existing educational structures, however, there are a few important options that decisionmakers in developing countries might consider that could increase the efficiency of schools and teaching without necessarily increasing budgets. We examine instructional time, class size, multiple shifts, differentiated staffing, and the use of educational technology.[4]

Instructional Time

Without increasing the payroll, educational systems can extend the school year, the length of the school day, and the amount of work students do in school or at home. Currently, school years range from 165 to 245 days, and school days from three to seven hours a day. Most teachers spend a lot of their teaching time doing nonteaching activities: administrative, bureaucratic, and clerical tasks, or merely copying books or instructions when textbooks are unavailable. By reducing the time spent on such activities, teachers can significantly improve student performance without increasing budgets. Given that most educational expenditures go into teacher salaries and that time is the scarcest resource in the educational system, what teachers and students do is very directly related to issues of cost-effectiveness and overall efficiency. The more students are exposed to learning activities, the more they learn, what they learn, and what they do become critical variables. Macro- and micro-decisions about time allocation are

4. On the topic of input mix and alternative resources to improve school effectiveness, see Fuller (1985); Heyneman and Loxley (1982); Lockheed, Fonacier, and Bianchi (1989); Mingat (1987); and World Bank (1986).

vital. Macro-decisions refer to the curriculum and time slots allocated to each discipline, with clear priorities based on educational effectiveness. Micro-decisions have to do essentially with classroom management techniques. In-service training and appropriate instructional materials to support teachers in their activities are essential for making the most productive use of time.

Class Size

There is no single answer about how big or how small classes should be. Essentially, it is a matter of classroom management techniques. Different sizes combined with different instruction techniques, however, depend on cultural values and attitudes (discipline, group behavior, and so forth), as well as on physical facilities (size of the classroom, fixed versus flexible furniture, and so forth) and on adequate instructional support materials. Relevant literature suggests thirteen clear learning gains for classes smaller than fifteen students. Empirical evidence suggests that students can learn equally well in classes of twenty to thirty students. Even classes of up to forty-five students do not perform significantly worse than classes of twenty-five students, and better instructional materials can compensate for any small losses of instructional materials; a much cheaper solution than hiring additional teachers. Educational objectives such as personal or small-group interaction may need special attention in larger classes, but these objectives can be achieved through other mechanisms, such as the use of para-professionals or peer tutoring. For some countries, regions, or disciplines, it might make both pedagogical and economic sense to have large classes even if teachers are paid additional salaries or receive extra resources to accommodate the added demands.

Double or Triple Shifts

School schedules and calendars can be planned on a shift basis so that learning time for students will not be significantly reduced. When there is a shortage of teachers, paying bonuses or additional salaries for teachers in double (or even triple) shifts may constitute cost-effective and feasible alternatives to training and hiring more teachers.

Differentiated Staffing

In some countries, differentiated staffing involves the designation of head teachers who, in addition to teaching, are responsible for managing schools and supervising and coaching lesser trained teachers. In other countries, regular teachers teach larger classes of students and are helped by lower paid para-professionals who handle specific tasks in the classroom. Another effective option is the use of peer tutoring, with older students helping younger students. Research suggests that both younger and older students benefit from these interactions, and the costs can be nil.

Educational Technologies

When the infrastructure allows it, technologies such as programmed instruction or interactive radio can be introduced to increase effectiveness and support the classroom teacher. These technologies constitute additional costs, but if adequately designed and implemented, some technologies can help teachers achieve higher levels of performance and lower levels of grade repetition and dropout, and thus yield substantial systemwide savings. Another option is to use distance teaching technologies to replace the teacher, either totally or in part, depending on the nature of the task and the level of the students. With the support of correspondence courses, printed materials, tapes, or broadcasts, teachers can provide individual or small-group tutoring at specific times, and they can handle many students within a given geographical area. There are numerous successful interventions in secondary education, teacher education, and college-level instruction that make use of distance education as a cost-effective

alternative, especially with scattered populations, to teach a given subject matter, to cope with shortages of teachers, or even for teacher training. What is important is that such technologies represent a reorganization of the traditional pattern of schooling. Throughout the world one finds attempts to deliver learning opportunities in fundamentally new ways through combinations of fully trained teachers, partially trained teachers, para-teachers, radio, correspondence lessons, cross-age peer tutoring, and so forth.

Maximizing Efficiencies

The several strategies discussed above have been used in various forms, in many different countries, in many different contexts, and for a variety of purposes. When they are implemented, students usually perform at least as well as students under more conventional conditions. Unfortunately, savings accruing from such decisions are not always converted back into other teaching/learning inputs.

The essence of the argument, however, is that poorer countries do not have to accept poorer teaching. The fact that industrial countries spend more on education, have smaller teacher/student ratios, and operate on a single shift does not necessarily mean that they are as efficient and effective as they could be. The fact that developing countries have scarce resources, however, requires them to be more efficient and to maximize the use of whatever resources they have to improve school quality.

Organizational Change

Education is a dynamic process that assumes different forms in different countries. Cultural traditions and institutional factors contribute to shape educational systems, for example, teacher remuneration policies are commonly linked to the remuneration of civil servants. The perceived status of teachers is heavily influenced by sociocultural factors. Financial constraints common to most developing countries limit the extent to which education policies can be adequately framed. The major issues policymakers have to face is how to cope simultaneously with the problems of equity and efficiency. Major changes in teacher remuneration policies can be successfully introduced only through careful implementation, consistent with political and organizational circumstances. The contents of policy changes and the strategies to introduce them in educational systems are discussed in the foregoing section.[5]

Policymaking, then, is a never-ending process. Teacher policies that are adequate and legitimate today may not be so tomorrow. The composition of the work force changes. The demography of students changes. The overall level of economic growth or stagnation varies. The power of unions in relation to governments also fluctuates as a function of a number of variables. Real-life implementation difficulties require planners and decisionmakers to alter policies to conform to specific situations; hence the importance of permanent attention from public authorities to issues pertaining to teaching and teachers. This is why ministries of education need to put in place permanent institutional channels and communication mechanisms to signal the necessary changes in ongoing policies and practices related to teachers.

Once implemented, policies have both intended and unintended effects. Some effects can be anticipated; others may be unexpected and undesirable. Even in the best of worlds, policy implementation is likely to yield some unwelcome surprises:

- A well-meant merit pay policy designed to reward superior individual performance can generate undesirable competition among teachers.
- An increase in class size may create insurmountable discipline problems.

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5. On the organization and management of schools see Dove (1986); Shanker (1985). Based on the experience of the World Bank (1986), the chapter by Obanya, Verspoor and Leno explains the conditions for successful implementation of reforms involving teachers. For further discussion of school decentralization see Oliveira (1989).

- An ill-designed (or even a carefully designed) evaluation scale may prompt teachers to limit their performance to the variables captured by the assessment instrument and disregard other important duties.
- A textbook for compulsory adoption may encounter negative reactions from teachers unfamiliar with its content or methodologies and thus remain unused.
- A teacher training scheme prepared in the ministry's headquarters is likely to be perceived by many teachers as totally meaningless.

Balance between Centralization and Decentralization

There are good reasons why many countries favor a centralized approach to educational planning and management. Centralization has many proven advantages. It allows for uniformity and discipline, as well as economies of scale, standardization, and personnel mobility. In education, centralization is also important for countries to maintain uniform curricula that foster national identity, for instance, language requirements.

There is a limit, however, beyond which centralization ceases to be beneficial. Rules start to increase. Controls necessary to ensure conformity and to avoid failure soon become cumbersome and costly. Monitoring and evaluation become both formal and sterile. Rigidities of all sorts threaten to paralyze the system. Norms intended to provide equality end up fostering inequality, as students or ethnic groups with different needs receive the same resources and same treatment in the name of standardization. Flexibility, adaptability, and innovation are not only impeded, but punished.

There are different levels at which educational policies and practices can be centralized or decentralized: national, provincial/state, regional, local, and school. In some countries only certain policies related to curricula, teacher careers, and general rules pertaining to school organization are centralized, while in other countries virtually everything depends on decisions made centrally, including school program, choice of textbooks, school supplies, and so forth. Centralization may also relate to the control a system has over actual teacher practices in the classroom. For instance, a centralized system without rigorous supervision and external exams may offer enormous latitude to teachers, while a decentralized system with external exams may end up promoting uniformity in teachers' behavior.

The fact that there are problems with centralized systems does not mean that decentralization is the solution. It suggests, however, that centralized policies would be more effective if they were kept to a minimum set of enforceable guidelines. Only essential policies that can be monitored effectively should be kept centralized. Which ones those are varies from country to country, and even across regions within a country. For some systems, it is essential to keep the school calendar uniform; for others, the curriculum, the language of teaching, teachers' careers and salaries, and textbooks must be standardized to some extent as well.

The Dilemma of Decentralization: Equity versus Efficiency

The implementation literature suggests that while centralization is more likely to produce uniformity, decentralization is more likely to increase efficiency. This is the basic argument in favor of market economies. What remains to be analyzed is whether countries can politically afford to manage educational systems that operate under clear equity constraints and still achieve economic efficiency. It is true that decentralized management offers more flexibility, adaptiveness, and innovation. The price to pay, however, is that equity is sacrificed, since differentials may increase. The argument in favor of efficiency is that additional resources available from an efficient operation could be used to correct imbalances, and serve those most in need. Most countries value equity over efficiency, and this is a very powerful political reason to maintain centralized educational systems. In practice, however, when equity is considered entirely separately from minimum efficiency, it can become a smokescreen behind which countries limit the benefits of schooling to a privileged few. In the name of equity, all-or-

nothing policies or those that allow schooling only if unrealistic or very rigid conditions can be met frequently increase the gap between haves and have-nots, for example, the gap between cities and rural areas.

Teacher-related policies would likely improve if they were conceived, designed, and implemented with the participation of teachers, teachers' associations, and teachers' unions. Teacher participation in the early phases of any reform, regulation, or project affecting teaching practices is likely to improve the chances of successful implementation. Such participation is likely to be effective, however, only in a system in which some key decisions can be taken at the school and classroom level. National priorities can be looked after, and effectiveness, efficiency, and equity can be balanced through the application of central guidelines and easy-to-apply rules of thumb. Centralized educational systems could benefit, however, from decision rules that provide early signaling of extreme, unacceptable practices requiring quick intervention. By the same token, excellence in teaching should be promptly and publicly recognized. Good schools and good teachers should be able to help other schools in need of improvement. As noted above, a plethora of local incentives can be identified and mobilized to ensure that mediocrity is eradicated quickly and quality is rewarded. Moreover, from the standpoint of a national government, these are virtually cost-free instruments.

Flexible Teacher Careers

Even within centralized systems, teachers' careers and promotion processes can be organized to foster innovation and flexibility in professional practice. Career patterns are typically designed with only upward mobility mechanisms, and these are generally highly segmented: teachers, principals, supervisors, school administrators, and so forth. Very little mobility is allowed as part of a larger strategy to improve teaching and school effectiveness. Most often, seconding teachers to bureaucratic jobs in the state capital is a prize for those few who are fortunate enough to have political connections. By the same token, remaining in the classroom is signaled as a form of punishment. Flexibility in career planning could improve teaching practices: teachers could be allowed to move sideways, move into supervisory jobs, participate in curriculum design, come back into teaching, act as head teachers and counselors for younger and inexperienced teachers, supervise a number of teachers and para-professionals, and work for fixed periods in planning and administrative offices. In some countries, a teacher working for a while in the civil service would require special regulation. If political and administrative conditions allowed the design of more flexible career plans, however, countries could save significant resources and spend less on traditional supervisory and teacher training practices. The new flexibility and creativity introduced by these various change agents operating at the different levels of the educational system would likely have a direct positive influence on conditions in the classroom. Finally, those in charge would design better and more appropriate policies if they were required, from time to time, to teach a year or more in actual classrooms. Closer familiarity with the realities of the grass roots is essential for dealing with issues of equity and efficiency, a real and intractable dilemma in centralized bureaucracies.

Teachers as an Organized Group

Teachers relate to governments not only as individuals but also as a collective body. Teachers are generally regarded as being extremely conservative, resistant to innovations, and, to a great extent, as responsible for the lack of flexibility in the education sector. Even if this is true, it remains to be seen whether attitudes and collective behaviors differ from that of other organized labor. In most countries, teachers are organized in associations, civil service organizations, or unions. The main and legitimate scope of these organizations is to improve the working conditions of their members. Teachers' organizations are essential for the effective implementation of educational change, particularly the policies that directly affect the teachers. Whether or not salary and compensation issues are involved, learning to negotiate

and work constructively with such organizations is a task facing government authorities concerned with improving the effectiveness of the education sector.

Basis of Decisions

Strategic planning and policymaking need not be conceived as grandiose actions formulated by a select group of wise people in high office. Quite the contrary, as experience of both public and private organizations is showing, successful strategies are formed in daily interactions with reality and with the active participation of those on the front line. Radical reform in education generally, and in teaching particularly, is extremely difficult to achieve and can happen only in special circumstances. Research and experience from both developed and developing countries may offer planners and decisionmakers an array of options, alternatives, and distilled knowledge that can help them to make better decisions. The irony in the case of developing countries is that choices are reduced, the price of mistakes is higher, and conditions for success are more limited. Yet to overcome these problems they have to be more efficient than industrial countries have been.

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2

INTERNATIONAL LESSONS FOR SCHOOL EFFECTIVENESS: THE VIEW FROM THE DEVELOPING WORLD

Joseph P. Farrell

The Schooling Crisis in the Developing World

One cannot adequately understand or interpret the literature on school effectiveness in developing countries without appreciating the state of profound crisis in which the educational systems of most developing nations are enmeshed. Since the great epoch of decolonization in the 1950s and early 1960s, there has been an extraordinary quantitative expansion in the availability of formal schooling. From 1960 to 1975, the total number of children in school in developing countries rose by 122 percent. The proportion of age-eligible children who spent at least a few years in primary school increased from 57 percent to 75 percent in the same fifteen years, with corresponding increases at the secondary level (14 to 26 percent) and post-secondary level (1.5 to 4.4 percent). In many nations, however, particularly many of the largest and poorest nations, the total population was growing even more rapidly than the rate of educational expansion. Thus, in the same fifteen-year period the total number of primary-age children not in school grew from 109.2 million to 120.5 million (Farrell 1982, p. 40). Since 1975 these trends have continued, although the annual rates of educational expansion have declined somewhat. Even the most optimistic enrollment forecasts suggest that by the end of this century no developing region as a whole will have achieved universal primary schooling, although some individual countries, particularly in Latin America, may have come close to providing at least a few years of primary schooling for all their children. Even these very optimistic projections (far too optimistic in my view), however, indicate that by the year 2000 there will still be over 100 million six- to eleven-year-old children in the developing world with no exposure at all to formal schooling (Coombs 1985, p. 84).

This quantitative expansion, even though far from achieving the universal primary schooling that was the dream of many international conferences in the early 1960s, has been driven by enormous financial investments by poor nations. Some very poor countries spend more than 30 percent of their total national budget on education and have done so for many years. On average, developing countries spend a higher proportion of their national budgets on education than do rich nations such as Canada. In poor nations, however, the total national budget is of course much smaller than in rich nations, which means the total funding available to education is much less. Moreover, because the international financial crisis of the past decade or more has hit poor nations particularly hard, in many such nations the actual national budget, and the educational share, in constant dollars (adjusted for inflation) has been going down. In rich countries, furthermore, total school enrollments have been declining, while in poor nations, they have been rising significantly. The net effect of all this is that the educational expenditure per student in poor countries, which has always been very low, has actually been declining, while in rich nations it has been rising. The educational expenditure gap between the rich and the poor has been getting worse. During the 1970s, the annual per pupil expenditure in

industrial nations (in constant 1980 U.S. dollars) increased from US$1,205 in 1970 to US$2,343 in 1980. In low-income countries, the per pupil expenditure decreased from US$109 in 1970 to US$75 in 1980 (Fuller 1986, p. 11). A recent survey (Heyneman 1985, p. 23) summarized the situation this way with respect to annual average expenditures per student:

> In 1960 the typical OECD country was able to invest 14 times more per student than did the average poor country; but five years later the gap had risen to 16:1; ten years later it was up to 22:1. Today, 20 years later, it is 50:1. The average (elementary school) student in an OECD country is exposed to 50 times the level of recurrent cost investments as a student at the same grade level in a low-income country.

These comparisons are dramatic enough in themselves, but the consequences in terms of what a North American education professional would take absolutely for granted are even worse. In most poor nations, teacher salaries, which are themselves very low—in some African nations a village teacher earns the equivalent of US$7 per month—and school construction costs absorb almost all the minimal per pupil expenditure, leaving almost nothing for even the most basic instructional materials to support the work of the teacher: chalk, blackboards, books, maps and charts, furniture, and so forth. In 1980, the average expenditure per pupil on instructional materials in industrial nations was US$92.32. The corresponding figure in low-income nations was US$1.69. Table 2-1 represents the range in this disparity of instructional resources.

Table 2-1. Annual per Student Expenditures on Instructional Materials, Selected Countries *(1980 U.S. dollars)*

Nation	*Per pupil expenditure*
Bolivia	0.80
Malawi	1.24
Indonesia	2.24
Italy	75.00
Netherlands	220.00
United States	220.00
Sweden	300.00

Source: Heyneman (1985, p. 24).

To translate these dollar values into real terms, consider the following. In North America, around half of the primary students have at least occasional access to a computer. We take for granted that all students will have complete sets of textbooks for all subjects, plus supplemental instructional materials and well-stocked school libraries. Overhead projectors, slide projectors, tape recorders, television sets (in color no less), and VCRs are common instructional currency. In contrast, in many developing nations thousands of children are in schools where there is not a single textbook, where the teachers have themselves completed only a few years of primary education, where chalk for the blackboard—if there is a blackboard—is in short supply, where even simple furniture is absent. In the Philippines in the late 1970s there was an average of one book for every ten children in the primary schools, a figure that through a very large national effort has now been raised to one book for every two students. In one East African country, a 1970 survey found that there was one chair for every eight primary students, and only one student in eighty-eight had a desk. Many primary schools

in such countries (if there is a school building at all) are lacking in basic safety standards (Heyneman 1985, p. 24):

> Walls frequently collapse after a rainfall; roofs have holes; wind and storms disrupt classroom activity as a matter of course. The normal classroom is dark and stuffy; students are forced to sit on a bare floor and balance an exercise book on their knees in order to write.

Many students, furthermore, do not even have an exercise book and a pencil. They work with a lump of chalk and a small hand-held blackboard, or they learn their letters and numbers by tracing them in the dust with a finger. There may be fifty, sixty, or more than eighty students in a class with a single, poorly trained teacher. In many developing nations, the single most difficult management problem is trying to ensure that teachers actually come to school most days. One should not conclude that all schools in developing nations are as I have just described, but many thousands are, and even more thousands are only minimally better off. Even the "best" schools serving elite populations in capital cities rarely have the kinds of instructional materials, equipment, and amenities that we would consider absolutely normal.

We must also bear in mind that even in a rich nation like Canada, we have at least some schools where conditions are little different from much of the developing world. The following advertisement appeared in the Toronto *Globe and Mail*, May 16, 1975.

> TEACHER FOR CHALLENGING AND DIFFICULT POSITION
>
> The Northwest Territories Department of Education requires one very special teacher for the school year commencing August 18, 1975, for a one-room school in Trout Lake. Trout Lake is a remote isolated community of approximately 55 Slavey Indian people, located one hundred air miles south of Fort Simpson.
>
> Applicants must be prepared to cope with both extreme personal and professional isolation. Contact with the nearest center, Fort Simpson, is sporadic at best and limited to unscheduled charter aircraft as weather permits. The community has no utility service whatsoever. Wood for the stove must be hauled approximately 10 miles. The teacher is expected to haul his-her own wood and water. The fifteen children in the school range from a pre-kindergarten to a grade four level. Instruction must necessarily be individualized. The first language of the children is Athabakan (Slavey dialect). "Furnished" accommodation is provided in a small log cabin heated by a wood stove.

The point to be drawn is that a condition that we regard as most unusual, requiring a "very special teacher," is a perfectly common condition in much of the developing world.

As one might expect, the conditions described above produce levels of learning in developing nations that are typically much lower than in rich nations. We have few systematic cross-national comparisons of student achievement levels, but those that have been undertaken by the International Association for the Evaluation of Educational Achievement (IEA), have consistently shown that the scores of children from low- and middle-income countries are lower than those of children of comparable age or grade in industrial nations. The differences are substantial in some subject areas and small in others, but they are consistent. These comparisons, moreover, involve children at the secondary school level (or in a few cases senior primary). In most developing nations, students who are neither well off nor bright do not survive to this level. Most students have long since dropped out of school, often having spent only a year or two in a building called *a school*.

What all of this means is that when education officials in a developing nation consider the question "How can we develop policies to make less effective schools more effective?" they will see it from a very different perspective from that of educational officials in Canada or the United States. Perhaps most important, those education officials know that they cannot adopt or suggest what is *our* most common approach to improving effectiveness: throwing money at the schools. If any measure to improve school effectiveness requires additional resources, they will have to be found within the existing educational budget, by spending less on some input or

activity that is not clearly related to student learning. A recent review of factors that affect educational achievement in industrial nations concluded (Hanushek 1986, p. 1,166):

> If we think of schools as maximizing student achievement, the ... evidence indicates that schools are economically inefficient, because they pay for attributes that are not systematically related to achievement.

Perhaps because we are rich, we can afford such inefficiency, although many are claiming we cannot. Poor nations, however, cannot possibly afford it. This forces a kind of discipline upon discussions of school effectiveness in developing nations that is frequently lacking in such discussions in rich nations. Concern must be not simply with effectiveness, but also with cost-effectiveness or efficiency. This brings me to the meaning I will give to "effectiveness" in this discussion.

Toward a Concept of School Effectiveness

The complex of what constitutes an "effective" school is subtle and complex. This becomes particularly apparent when one considers the issue in the stark and often desperate context of schooling in the developing world. At the simplest level, student growth or development—learning—is the basic "output" of schooling. The more students "learn" in a given period of time the more effective is the school. The range of learning goals assigned to schools by society, however, is very wide; many of us would say inordinately or impossibly wide. We know how to measure (that is, "test") only a small portion of the learning goals. For many important learning goals, we do not even have an agreed conceptualization, which is a necessary pre-condition to developing a measure of achieved learning. For example, producing "good citizens" is an almost universal goal assigned to schools, and one which is particularly important in many new and fragile nations whose populations are often bitterly divided along class, racial, ethnic, or religious lines. Yet there is little agreement on the meaning of the concept "good citizen," and consequently no effective way to measure it (indeed, the more internally divided a nation the more difficult it would be to get agreement on the meaning of the concept). Other frequently cited learning goals whose conceptualization is difficult, and whose measurement is therefore problematic, include self-esteem, learning how to learn, advanced thinking skills, problem solving, and decisionmaking. Given the limited range of learning goals for which we know how to test, if our schools produced cohorts of effective little test-takers, but did nothing else, or indeed even taught students that test-taking constitutes learning, would we judge them "effective?" I think not. At least, I hope not.

Even if we had testing instruments that accurately and validly assessed student learning on all the multiple objectives assigned to schools, we would be faced with another problem in using those test results to evaluate the effectiveness of schools: we would need to assign a kind of agreed social weight to each class of learning outcomes. Is learning to read with comprehension a Margaret Atwood novel more or less important than learning how the digestive system of the human body functions or learning the dangers associated with drug use? How would one factor the learning of civic virtue into this equation?

Finally, even if we were able to solve the problems of conceptualization, measurement, and evaluation noted above, we would still be faced with an even more difficult problem, what economists sometimes refer to as the value added problem.

We know that children learn much before they encounter schooling, and that children from more privileged backgrounds come to school having learned more (at least of the classes of knowledge valued in schools) than children from less privileged backgrounds. We also know that while they are undergoing schooling, children learn much from their out-of-school experience, and again, more privileged children have more out-of-school learning resources available to them than do poorer children. The evidence from industrial nations shows quite clearly that these out-of-school factors (as captured by the socioeconomic status of the student's family) explain more of the variation in students' test scores than do school-related factors themselves. Yet it is to the "value added" to learning by these school-related factors that

school effectiveness properly refers, to that portion of learning gains that can reasonably be attributed to the schooling process itself. Within this conception of effectiveness, a school that produces high test scores, but deals with learning-privileged children, may be less effective than a school that produces lower test scores, but serves children with many fewer out-of-school learning resources. The learning gain reasonably attributable to schooling would be less in the former case than in the latter. In a study in which I participated in Chile, we found that differences in test scores between elite private schools and the public schools of the nation (which served an economically poorer clientele) were entirely explained by the differences in the students' home backgrounds, and that key school-related factors had a greater effect upon the learning of poor primary school children than rich children. In this case, the schools serving the poorer children were more effective than those serving the most privileged children in the nation, in spite of the higher average test scores in the elite private schools (Schiefelbein and Farrell 1982).

Finally, in poor nations particularly, as I have noted above, one cannot consider the effectiveness of schools, as defined above, in isolation; one must consider the effectiveness of various schooling alternatives in relation to their cost. One must be concerned not with school effectiveness as such, but with the internal efficiency of schooling, searching for ways to increase the total learning output of the schooling system without increasing total system costs. In the developed world, very little work has been done within a cost-effectiveness or internal efficiency framework. With reference to the developing world, because of the educational crisis outlined at the beginning of this paper, a great deal of attention is being paid to questions of internal efficiency of schooling. A great deal of research has been generated during the past fifteen years that is relevant to the problem. It is to the results of this work, and the implications that may be drawn for educational policy and practice, that I now turn.

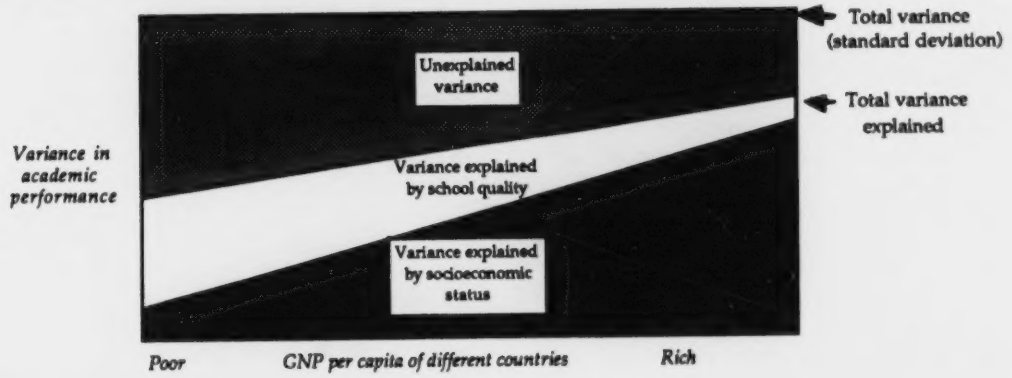
What the Research Says: The Overall Effect of Schooling in Developing Nations

Starting in the mid-1960s with the now-famous *Coleman Report* in the United States (Coleman and others 1966), the *Plowden Study* in the United Kingdom (Peaker 1971), Jenck's work on the United States (Jencks and others 1972), and the early IEA studies, a substantial body of research appeared from industrial countries that indicated that out-of-school factors had a much greater influence on student academic achievements than did school-related variables directly under the control of teachers and educational administrators. While these studies have been criticized on methodological and substantive grounds, the general pattern of results has remained remarkably constant. Indeed, the current concern over school effectiveness can be seen in part as a reaction to these findings.

Beginning in the early 1970s, a series of similar studies began to be reported from developing nations, starting with Chile (Schiefelbein and Farrell 1973), then Uganda (Heyneman 1976) and, thereafter, many other nations. These results were markedly different from those from rich nations. A survey published in 1982 of the best available set of comparable findings from low- and high-income countries confirmed what some of us began to conclude in the early 1970s (Heyneman and Loxley 1982). In poor nations, school-related factors are more important than out-of-school factors in explaining differences in student achievement. As figure 2-1 shows, the relationship is very systematic (indeed it is one of the most systematic relationships ever uncovered in the comparative study of school systems): the poorer a nation, the greater is the influence on academic performance of school quality factors; the richer a nation, the greater the influence of student socioeconomic status.

Several explanations for this consistent pattern have been advanced. I suspect that part of the answer is the move toward a more fully developed industrial stratified class system. In poor nations, differences in parental occupation or income do not represent differences in language usage in the home, child-rearing practices, and provision of out-of-school learning resources to the same degree as in highly stratified industrial societies. I also suspect that in

Figure 2-1. Influences on Academic Achievement in High- and Low-Income Countries



Source: Heyneman (1986, p. 23).

rich nations we are much closer to the limits of perfectibility of the technology of schooling, such that even modest additional gains in achievement require very difficult and costly educational efforts. In a nation where most students have no textbooks, the provision of a small set of basic texts for each student (or even a set for every two students) can have dramatic effects upon student achievement. In a nation where schools are already abundantly supplied with books, improvement in learning requires very difficult and costly improvement in the quality of the books (even if we knew what kinds of book quality influences student learning). In a nation where most primary teachers have very low levels of formal schooling themselves and little or no pedagogical training, a modest change or increment in pre-service or in-service training can have significant effects on teacher performance in the classroom, and hence on student learning. In a rich nation where almost all primary school teachers have university degrees, many have post-graduate degrees, and professional development opportunities are widespread, even small improvements in teacher performance are difficult to achieve and dearly purchased.

A parallel from athletics may be useful here. For a mile runner who is just beginning and has limited facilities available, small changes in training regime or in the quality of the track or shoes can produce large performance gains. For internationally competitive runners, shaving even a few hundredths of a second off "best time" requires enormous effort.

There is a double lesson from these comparative data, important and hopeful for educators in both industrial and developing nations. For educators in rich nations the lesson is when you get near to the best that can be done, without a massive change in the technology and organization of learning, producing a system very unlike what we now think of as schooling, even small additional increments in the effectiveness of schools will be hard to come by and difficult to identify. In my view, this is cause not for despair but for celebration, however frustrating it may be for the educational evaluation or innovation implementation industries.

For educators in the developing world, the lesson is that even the very modest improvements in school quality that a poor nation can realistically contemplate have the potential for producing important increases in student learning. For such educators, operating as I have noted within an efficiency rather than an effectiveness framework, the crucial question then becomes: what are the educational "best bets?"

What the Research Says: Factors that Do and Do not Influence Achievement

Note first that while the amount of evidence regarding particular schooling characteristics that affect educational achievement in developing countries has been increasing rapidly in

recent years, the total amount available is far less than in industrial nations. On questions where there may be hundreds of studies in North America, there may be none, or only a few, from the entire developing world. It is also clear that educational research results from industrial nations cannot be transferred automatically to developing nations. Poor nations, however, being poor, have little money to spend on research. Of the evidence that is available, some has been financed by local governments, but most has been funded by international aid agencies. The available evidence is also spotty. Some questions have received much attention; others little. Some regions and individual nations have produced much more educational research than others. The investigations themselves, moreover, are of several different types. Some are large-scale correlational exercises where tens, if not hundreds, of separate factors have been thrown into the statistical hopper to see which ones relate best to student achievement. Others are small, carefully controlled experiments. Still others are large-scale evaluations of a particular program or policy within a given nation. Finally, just as we cannot assume that research results from industrial nations will translate to developing nations, we also cannot assume that findings from one part of the developing world are generalizable to other parts. The anthropological evidence is now clear that children from different cultures learn to learn differently (something that educators in a rich, multicultural society like Canada should bear in mind, but that's another story). What will work educationally for children in Latin America will not necessarily be effective among East African or Chinese children (Farrell 1987). What all this suggests is that any conclusions drawn from the available evidence must be cautious and tentative. As is always the case, however, practitioners and policymakers must make their decisions on the basis of such information as is available, even if it is less than perfect.

With these caveats in mind, table 2-2 is a summary of the evidence from the best available review of studies that have related one or more schooling factors to student achievement. All the studies included have controlled in one way or another for the effect of student socioeconomic status so as to get estimates of the independent effect of the schooling variables. For each schooling indicator, we first have the expected direction of the relationship with achievement (would one expect an increase in the indicator to have a positive or negative effect on achievement?). Next, we have the total number of studies in which the particular indicator has been included. The last three columns indicate the number of analyses where the results were in the expected direction, the number where they were not, and the confirmation rate, which is the percentage of all analyses where the results were in the expected direction.

The table does not include information about the strength of a particular indicator's association with achievement. This is a very important consideration, obviously, but it is very difficult to produce a meaningful summary measure from studies employing different methodologies and statistical techniques. The discussion below, however, will be informed by my own knowledge of the strength of association reported in the underlying studies. One may also note that there is almost nothing in this table regarding classroom process or teaching practice. Little work on this key aspect of schooling has been done in developing nations, and what is available is not amenable to this kind of cross-national aggregation. This may be just as well. Given that children in different cultures learn differently, as noted above, any summary indicator of effective teaching practice taken from a few studies in several different cultures could be quite misleading.

At first glance, the array of results portrayed in table 2-2 may be rather confusing. Some clarity may be gained by identifying three clusters of factors:

- Those where we have a relatively large number of studies and a high confirmation rate;
- Those where we have a relatively large number of studies and a low confirmation rate;
- Those where we have few studies, but the confirmation rate is very high.

The first cluster are the "best bets" for improving school effectiveness. The probability is reasonably high that improvement in these dimensions will increase student learning. The second cluster are "worst bets." The probability is low that investing in these areas will

increase school effectiveness. They may represent areas where money could be saved to redirect to the first cluster. The third cluster constitutes promising possibilities, many with a high degree of intuitive appeal, even if the research base is narrow.

Table 2-2. Influence of School Quality Elements on Student Achievement

School indicator	*Expected direction of relationship*	*Total number of studies*	*Number of analyses confirming effect*	*Number of analyses reporting no or negative effect*	*Confirmation rate (percent)*
School expenditures					
Expenditures per pupil	+	11	6	5	54
Total school expenditures	+	5	2	3	40
Specific material inputs					
Class size	-	21	5	16	24
School size	+	9	4	5	44
Instructional materials					
Texts and reading materials	+	22	14	8	64
Desks	+	3	3	0	100
Instructional media (radio)	+	3	3	0	100
School building quality	+	2	2	0	100
Library size and activity	+	18	15	3	83
Science laboratories	+	11	4	7	36
Nutrition and feeding programs	+	5	5	0	100
Teacher quality					
Teacher's length of schooling					
Total years of teacher's schooling	+	25	11	14	44
Year of tertiary & teacher training	+	30	21	9	70
In-service teacher training	+	5	4	1	80
Teacher's length of experience	+	23	10	13	43
Teacher's verbal proficiency	+	2	2	0	100
Teacher's salary level	+	13	4	9	31
Teacher's social class background	+	10	7	3	70
School's percentage of full-time teachers	+	2	1	1	50
Teacher's punctuality & (low) absenteeism	+	2	0	2	0
Teaching practices/classroom organization					
Length of instructional program	+	13	11	2	85
Homework frequency	+	7	5	0	71
Active learning by students	+	2	0	2	0
Teacher's expectations of pupil performance	+	3	3	0	100
Teacher's time spent on class preparation	+	5	4	1	80
School management					
Quality of principal	+	7	4	3	57
Multiple shifts of classes each day	-	3	1	2	33
Student boarding	+	4	3	1	75
Student repetition of grade	+	5	1	4	20

Best Bets

In this cluster, two variables stand out: texts and reading materials, and library size and activity. It should not surprise us that children who have access to textbooks and other reading material learn more than those who do not, and that the more books they have, the more they learn. One thing that is particularly impressive about the research results regarding reading material is that the reported positive associations with achievement tend to be strong, particularly in carefully controlled large-scale experiments. In the Philippines, for example, a large experiment found that providing one book for every two primary students, as opposed to one for every ten, produced the following achievement gains among first grade pupils: 0.51 of a standard deviation in science, 0.30 in mathematics, and 0.32 in Filipino. These results reinforced the determination to mount a national textbook provision scheme. From an efficiency point of view, it is worth noting that the cost of the national text program represents 1 percent of the annual educational budget. As one observer of the Philippine program has noted: "This improvement (in achievement scores) is twice the impact of what would be gained by lowering class size from 40 to 10" (Fuller 1986, p. 40), which would produce an enormous cost increase. There is also strong evidence that provision of texts and other reading material has the greatest impact upon the achievement of poor children (Heyneman, Farrell, and Sepulveda 1978). Thus, from the value added perspective outlined above, their impact on school effectiveness is particularly great. Several poor countries, moreover, have demonstrated that by charging a small fee for textbooks (small enough that even very poor families can bear the cost), a national textbook provision program can be sustained with no additional cost to the national budget. Lesotho, for example, has a very effective program of this sort (Overton and Aime 1985). China produces about two billion school texts a year and recovers the cost by charging a small fee for the books.

There is also some indication that the availability of books allows teachers to assign homework, one of the promising possibilities in table 2-2. Beyond this, there is some observational evidence that textbooks in the classroom allow teachers to diversify their teaching repertoire and to work with small groups and individual students. In a classroom with no books, about the only teaching-learning style possible is teacher lecture and group recitation and rote memorization. Books allow other options. Finally, there is some indication from various countries that a well-designed teachers' manual accompanying a textbook set is a very effective form of in-service training for poorly trained teachers. All in all, textbooks appear to be the best available investment a poor nation can make from an educational efficiency point of view (see Farrell and Heyneman 1989).

Years of tertiary and teacher training is another variable in this first cluster. It is particularly interesting to consider this variable in relation to total years of teacher's schooling, which is the second cluster, and in-service teacher training, which is in the third cluster. When one considers all the evidence regarding these three variables, taking into account the quality of the various studies and the strength of association with achievement, plus observational and ethnographic evidence that is not summarized in table 2-2, three conclusions appear well supported.

- It is important for teachers to have achieved a level of formal schooling at least just above that of the students they are teaching. That is, primary teachers should themselves have junior secondary education; junior secondary teachers should have senior secondary education; senior secondary teachers should have a university degree. Providing or requiring more formal education than these minimums, however, can be a very bad investment. Some poor nations provide university education for primary teachers. The payoff for this additional formal education in terms of student achievement appears to be minimal or nil. Yet the cost is great both in terms of the university education itself and the additional lifetime salary of the university-educated teacher (most salary scales reward years of formal schooling). Thus, one has a high cost/low payoff item, which is most unfortunate from an efficiency point of view.

- Pre-service teacher training is important, but not as strongly associated with achievement as textbook provision. The available data are not clear on this point, but there are some hints (backed by much anecdotal evidence) that the most cost-effective combination would be a relatively brief pre-service teacher training experience followed by a systematic provision of in-service training, especially during the early years of training.
- In-service training appears to be very important. The solid studies are few, but the results seem strong. There is some evidence that the effect of in-service training is strongest when it is relatively participatory and responds to needs teachers themselves have identified, and weakest when it consists of "experts" telling teachers what "they ought to know" (Shaeffer 1986).

Although there is no clear and direct evidence on this point, I suspect that the points noted above help explain the rather puzzling lack of strong and consistent association between teachers' length of experience and student achievement (particularly puzzling because most teaching salary scales reward years of experience, assuming a strong positive relationship with student achievement). It is probable that teachers with very little formal schooling and little or no pre-service training are not equipped to learn from their experience. They simply repeat the same ineffective teaching patterns year after year. Put another way, investments in pre-service and in-service training may have a kind of multiplier effect by enabling teachers to become more effective with the years of experience that most salary grids pay for.

The final variable in the first cluster is length of instructional program. It is hardly surprising to discover that children who spend more time studying something learn more of it on average than those who spend less time, all else being equal. There are, however, some dangers or problems here. First, the relationships discovered between achievement levels and total class time (for example, length of school day or length of school year) are generally moderate. Clearly what is important is not so much how much total time is available, but how the time is used (that is, the underlying issue is one of teaching strategy or classroom management, which refers back to the teacher training issues discussed above). If ineffective classroom management practices are not changed, lengthening the school day or year will simply add to the time students waste in ineffective schools. Second, results in this area are strongest when they relate time spent on a particular subject (for example, science) to achievement in that subject. This, however, runs up against the fact that in all societies, school time is limited and fixed. The scarcest curricular resource is time, and the more time devoted to any one subject, however effectively or ineffectively it is used, the less time there is available for everything else. This is a truth that primary teachers facing a hopelessly overloaded curriculum know in their bones. Third, it is this latter phenomenon that makes the presence of testing programs that do not adequately cover the entire intended curriculum (including both cognitive and affective domains) potentially dangerous, for they inevitably drive teachers to devote most of the available instructional time to those curriculum areas that are included in the tests. The international evidence regarding this "backwash" effect of testing is overwhelming.

Worst Bets

Beyond the teacher schooling and teacher experience variables discussed above, three other variables in this cluster stand out: class size, science laboratories, and teacher's salary level. All three represent areas of high educational cost, and none has been found to be consistently and powerfully related to school effectiveness. They all are areas in which significant cost savings could be realized without important effects on student achievement, which would free funds to be invested in the areas discussed above. A study carried out in Chile more than a decade ago indicated that even very modest increases in average class size and reduction of the teacher wage bill (by hiring more primary teachers with secondary-level normal school training rather than university training) would free up enough funds to finance fully a national textbook provision program at the primary level and to provide resources for other programs

discussed below under promising possibilities. The study concluded that such a rearrangement of investments would significantly increase school effectiveness without increasing total system costs (Schiefelbein and Farrell 1973). To the North American school person, accustomed to a relative abundance of educational resources, this may seem to be a rather brutal approach. In the poor nations of the world, there is no other recourse. The educators of the poor must make the hard choices that we, with our bounty, have been cheerfully able to avoid.

Promising Possibilities

In this cluster, there are several variables that seem obviously promising, even though the hard research base regarding them is small: desks, instructional media (radio), school building quality, and nutrition and feeding programs. The provision of desks and adequate buildings are minimal conditions for almost any kind of effective teaching to occur. Children who come to school day after day with insufficient nourishment will not learn well, nor will they live well. For such children, numbering in the hundreds of thousands in the developing world, using schools as feeding stations can have significant effects upon their ability to learn and, with careful planning and administration, it can be done very inexpensively.

The evidence regarding the use of radio as an instructional medium, which is very impressive in the few cases where it has been seriously tried and carefully evaluated, introduces a new theme. What is important about some of these experiments with instructional radio is that they do not involve simply adding a radio program to a standard traditional classroom. The radio is used rather as a substitute for a fully trained teacher. It represents a reorganization of the standard technology of schooling. Throughout the developing world one finds small and large attempts to alter fundamentally the traditional technology of schooling, using combinations of fully trained teachers, partially trained teachers, para-teachers, radio, correspondence lessons, cross-age peer tutoring, and so forth to deliver learning opportunities in fundamentally new ways. It is too soon to tell, but the early results seem to me to be promising, and there is much discussion at national and international policy levels about ways to break out of the traditional image of schooling so as to deliver learning opportunities to more children more effectively and more efficiently.

Early in this paper I suggested that in North America we are reaching the limits of the possible with the technology of schooling as we normally have conceived it. If in very poor societies fundamental changes in that technology are being discussed and tried, what might we do in our resource-abundant societies if we put our imaginations to work? This is not an argument for some simple-minded sort of "de-schooling" as was occasionally promoted in the 1960s. Nor is it an argument for introducing into standard classrooms the oddments and detritus of modern communications technologies: films in the 1950s, television in the 1960s, computers and VCRs in the 1980s. Rather, the argument is that if we are going to achieve any significant increases in what our young people learn, we will probably have to re-think radically how we deliver opportunities to learn. So long as we maintain the image that schooling involves compulsorily delivering several hundred kids to a single building for five to six hours a day, where they are divided into groups of twenty to forty to work with a single adult in a single small room for discrete periods of forty to sixty minutes, each devoted to a separate "subject," there is very little that the innovation implementers or school effectiveness promoters can do for us. The most one can hope for is modest improvement at maximal cost. Perhaps that is a luxury we can afford because we are rich. It is a luxury most of the world's educators cannot afford.

Conclusion

I have described typical conditions in schools in the developing world. I have outlined the effectiveness/efficiency crisis being faced there and the ways in which much thinking and some practice is being reoriented to try to deal with that crisis. It is in some respects a grim and desperate picture, but I would like to close on a somewhat more optimistic note. For all the

difficulties they face, there is still a great deal of good teaching and effective learning occurring in poor countries. Not enough by far, but more than one might expect. I have seen students and teachers in very poor circumstances accomplish quite remarkable things. In middle-income nations, there are many schools where the learning achieved is the equivalent of that in our own best schools. Clearly, most children in poor nations do not have the opportunity or good luck to attend such schools, but some do.

Returning to my original conception of school effectiveness, I would claim that from a value added perspective, many schools in the developing world are doing better than schools in the developed world. They are accomplishing greater learning gains with far fewer resources. They are doing more with less. Why should that be so? That is the question, and the challenge, that I present to you on behalf of the besieged educators of the developing world.

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Part II:

The Economics of Teacher Remuneration Policies

Part II suggests ways in which teacher incentive systems can contribute to teacher effectiveness. Salary scales, that is, a policy statement on remuneration by which the salary of any teacher is determined in accordance with his or her qualifications, is one such incentive system. Nonmonetary incentives are also examined.

Chapter 3 discusses the economic, political, and individual criteria that influence salary scales. The two major criteria most commonly used to determine a teacher's position on the teacher salary scale are level of qualifications and years of experience. Unified salary schedules, the most widely used schedules, attempt to relate teacher qualifications to teacher performance. The chapter also discusses the conceptual underpinnings of alternative schemes, such as merit pay or subject differential pay scales. Although parameters in constructing models that forecast salary schedules vary widely, and it is impossible to predict the future average salaries of teachers, such models provide an efficient way to forecast teacher salaries under a variety of assumptions.

Chapter 4 analyzes a general framework for understanding the macro- and microeconomics of teacher remuneration policies. Whether teacher salaries are high or low needs to be assessed relative to market prices. Pay scales should not be based on education and experience alone, but on a formula that considers individual salaries as a resource allocation. Such a formula should make distinctions in teachers' salaries according to location, and reward individual performance instead of offering a predetermined wage path.

Chapters 5, 6, and 7 discuss teaching remuneration policies in France, the United States, and Japan. Issues faced by policymakers in these countries are exactly the same as those developing countries face: how to set remuneration levels, bolster teachers' motivation, and improve the attractiveness of teaching careers.

Chapter 5 enumerates reasons for the teacher shortage in France and investigates whether this is a problem peculiar to France. The authors consider two main reasons: teachers' salaries and other aspects of the teaching profession unrelated to salary. They suggest that teachers' salaries in France have kept pace with those in other professions, and although there has been some drop relative to per capita GNP, the buying power of teachers' salaries has not been noticeably eroded. What has changed is the longer time required at the outset before a person can qualify for a teacher's salary and a later retirement age, both of which are viewed negatively. Nonsalary reasons for the teacher shortage include the age at which a teacher begins to teach, the number of hours worked weekly in preparation and marking time, administrative tasks, and teacher status. The chapter makes international comparisons of teachers' salaries by using the buying power of salaries as the basis of comparison and suggests that although in some countries salaries have dropped, sometimes below per capita GNP, this does not necessarily mean a decrease in buying power.

Chapter 6 examines recommendations from national reports regarding teachers in relation to the quality of education in the United States and the social and economic aspects of teaching,

and makes recommendations. The social aspects of teaching include working conditions (workload, job responsibilities, and resources available to teachers) and social conditions (public opinion and support). The economic aspects of teaching include salary (level; life cycle; and type of payment schedule, merit or differentiated) and fringe benefits (mobility, job security, job sharing possibilities, and short work year). The author suggests that teachers will respond to changes in the social and economic aspects of teaching, although it is not known in what ways or by how much. The author also suggests that economic and social inducements might be used to encourage teachers to become more motivated.

Chapter 7 presents a comparative analysis of Japanese and American public school teacher salaries. According to data collected from 1983-84, the average salaries of Japanese and U.S. teachers were nearly equal in purchasing power. The salary structure in Japan has the following characteristics: differing schedules for elementary and secondary school teachers, salary increases with seniority for up to thirty-nine years, a reward for earning academic degrees, and bonuses and special allowances based on personal need factors and teaching assignments. There are no national or state salary schedules in the United States, but the following characteristics typify United States local salary structures: the same schedule applies to both elementary and secondary school teachers, salary is determined by experience and training, performance is not considered, and bonuses and special allowances are almost never given.

Data on other teaching conditions indicate that Japanese teachers have substantially less post-secondary schooling than American teachers; however, the average number of years of experience per teacher is higher in Japan. The Japanese teacher's work year is longer, and teachers are responsible for a wider range of functions than U. S. teachers. Classes are larger in Japan. Nonsalary compensation is higher for Japanese teachers, and includes pensions, medical insurance, disability pay, survivors' benefits, and an array of social services. The authors compare average salaries and analyze the relationship between teacher pay and seniority.

The best available data on teacher remuneration policies in developing countries is presented in chapter 8, drawing from the experience of twenty countries in Sub-Saharan Africa. Countries in Sub-Saharan Africa are trying to achieve universal primary education. Given their budgetary constraints countries seek increased efficiency and reduced input costs. Teachers' salaries account for over 90 percent of the primary school recurrent budget. Therefore, the analysis of teachers' salaries is crucial to forecasting primary school expenditures and developing policies to rationalize teachers' cost. The chapter analyzes the factors affecting teachers' salaries in general, and describes the categories of teachers, salary structures, and pay supplements in Sub-Saharan African countries. A computer forecasting model provides forecasts of teacher costs for the next two decades for twenty Sub-Saharan African countries under varying hypotheses, and suggests steps to facilitate the planning of teacher salaries in Sub-Saharan Africa. Overall, the study points out the crucial role of salary scale structures, illustrates the present distribution of the teaching force, and discusses implications of the growth rate of education systems in determining their future costs.

Even though problems and their causes are strikingly similar in countries at different stages of development, the solutions are not, particularly in counties facing a tremendous shortage of resources and qualified teachers. The methodology and actual findings presented in these papers should help increase the effectiveness of educational planning and the design of specific solutions for dealing with the problem of reducing average teacher costs while maintaining or improving educational quality in developing countries.

Part II also discusses alternatives to conventional solutions to teacher remuneration. Chapter 9 examines the concepts of merit pay and subject-matter differential pay. The author reflects on the U.S. experience (the only available source of data on these topics), describes the existing systems, analyzes their drawbacks, and suggests ways in which such schemes could be successfully implemented in developing countries. In particular, the author suggests that uniform salary scales have inherent problems: they do not motivate teachers to high performance, find skilled teachers of mathematics and science, or find teachers to work in rural areas. Policy solutions to these problems include the use of merit pay, salary premiums for

specialized knowledge, and location premiums. Since the outcomes of adopted policies depend on teachers' responses to those policies, policymakers must be sensitive to the possible range of teacher responses and choose policies that encourage cooperation among teachers, administrators, and students.

Chapter 10, the final chapter on the economics of teacher remuneration policies, introduces an array of nonmonetary rewards commonly used in developing countries. Even though there is no evidence about the effectiveness of such incentives in specific school systems, these strategies are extensively used. They might be useful, cost-effective components of carefully designed, financially affordable, and politically feasible teacher remuneration policies. Many factors affect teachers' performance, including a teacher's entry characteristics, teacher training, compensation packages, the nature and availability of instructional support, opportunities for promotion and advancement, the school environment, and teachers' status in the community. The more desirable the total teaching package, the more likely teacher performance will be high. As regional or central governments are limited in what they can do for schools, communities should be involved in promoting teacher performance. Communities often have exclusive control over the provision of some of these factors, such as housing and secondary employment opportunities. A shared responsibility generates a level of community involvement. The community can also respond to problems more quickly and directly.

Both monetary and nonmonetary teacher incentive systems contribute greatly to teacher effectiveness. Monetary incentives include salaries and fringe benefits. Nonmonetary incentives include working conditions and status. The level of teacher effectiveness attained within a country or region will depend on adopted and implemented monetary and nonmonetary incentives.

3

FACTORS AFFECTING TEACHERS' SALARIES

Manuel Zymelman with Joseph DeStefano

Primary education in Sub-Saharan Africa is facing an uncertain future. After remarkable progress since independence—enrollments increased almost fivefold and enrollment rates almost doubled—the rate of increase of enrollments can now barely keep up with the growth of the primary school age population. As for the future, just keeping the same enrollment rates would require a gargantuan effort. By the turn of the century almost 40 million new student places would have to be created, another million teachers would have to be employed, and recurrent expenditures would have to double. All this while going through a painful economic adjustment process that is required for modernization and development.

Given the stricture of future education budgets, there is no alternative but to increase resources to basic education by reallocating increases of the education budget and by introducing measures to increase efficiency and to lower unit costs. Unit costs depend not only on the use of elements, but also on their price. In primary schooling, the most important element is the teacher (teachers' salaries account for 90 to 95 percent of the recurrent budget in African countries). It is incumbent, therefore, to study, understand, and analyze teachers' salaries in Sub-Saharan Africa to be able to forecast primary school expenditures and develop realistic policies to minimize teachers' cost.

Factors Affecting Teachers' Salaries

Teachers' salaries are affected by different variables: economic factors, government policy, individual criteria, and salary scales.

Economic Factors

Economic factors affecting teachers' salaries are likely to be the same as those affecting salaries in general. Theoretically, in free societies wages or salaries have an allocative function: salaries are offered for the peoples' services as an inducement to take up or to stay in a certain occupation, while salary differentials among occupations are incentives to induce human resource shifts. Although earnings are not the only variable, if other factors are kept constant, occupations offering higher salaries will attract more and/or better qualified candidates than occupations offering lower salaries. The two most obvious factors affecting salaries in general are the level of national productivity and changes in the cost of living. In general,

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Excerpt from *Primary School Teachers' Salaries in Sub-Saharan Africa*, World Bank Discussion Papers No. 45.,1989.

$$W_t = W_o (1+m)^t (1+n)^t$$

where w = salary, t = number of years, m = rate of increase of prices, and n = rate of growth of productivity.

This formula explains why education necessarily becomes progressively more expensive, even when the education provided remains at a constant level of quality, and even in the absence of price inflation. If teachers' salaries are held constant while other wage earners increase their earnings because of increased productivity, the quality of teaching would deteriorate, since in the long run the best teachers or candidates for the teaching profession would shift to other occupations. If teaching is to claim well-qualified candidates, the profession will have to be made as attractive as other comparable professional or semi-professional occupations.

While factors affecting teachers' salaries are largely economic in nature, there are also some social and political factors exerting strong pressures. For example, the fact that teachers are also public employees means that other government objectives may conflict with the allocation of resources to education. In some cases where teachers form the bulk of public and urban employment, they can exert considerable political pressure; in other instances, the legal prohibition to strike may mitigate against salary raises. Social and cultural traits that confer higher social status to teachers may make teaching at lower salaries more attractive; demographic pressures and attempts to lower student/teacher ratios may intensify teacher shortages and spur higher salaries.

Government Policy

Theoretically, salary scales (schedules) for the teaching profession should be used to ensure that an individual teacher's remuneration is commensurate with his or her level of qualification and professional responsibility and to guarantee the individual a reasonable career prospect. Teachers in Sub-Saharan Africa are, in most cases, government employees, so salary scales for teachers are either part of the overall pay scheme for public functionaries or specific to the teaching profession. In the former case teachers are assigned a grade within the normal government employee ranks and paid a salary equivalent to their equally qualified civil servant counterparts. Where teachers' pay scales are separate from other government employees, their salaries can be established and updated separately. In practice, however, adjustments to teacher salary scales are based on, and often made at the same time as, adjustments to all civil servant salaries.

In Sub-Saharan Africa, the decision to regulate teacher salaries is most often made unilaterally by the government without consultation with or participation by teachers' representatives. Many Sub-Saharan countries have teachers' unions. Collective bargaining, however, is rarely used as a means of setting teachers salaries. It is more likely that unions exert political pressure on the government with the expectation of influencing its decisions.

Individual Criteria

A teaching pay structure is a predetermined succession of salary levels corresponding to different categories within the teaching profession. The placement of each individual in the appropriate category and step of the corresponding salary scale (schedule) depends on the characteristics of that teacher compared to predetermined criteria. The criteria used throughout Sub-Saharan Africa include the following: the level of qualification of the candidate, the degree of responsibility associated with his or her assignment, and the amount of experience. In some countries professional performance also plays a role in determining a teacher's subsequent advancement within the salary scale.

- *Level of qualification.* The primary determinant of the category to which a teacher is assigned (and, therefore, his or her salary and career prospects) is the level of academic

qualification. Included within the individual's qualifications are the years of general and specialized education as well as any professional training received. Categories exist in most countries for teachers who have completed primary, junior, secondary, or senior secondary levels of education. Distinctions are also made between teachers with no specialized pedagogical training and those who have received varying degrees of training (as part of their secondary education or in addition to it). The majority of countries also differentiate between certified and uncertified teachers. This division is usually based on completion of specialized training and success in a state examination.

Although minimum standards exist for primary teacher qualifications (in most countries at least a junior secondary certificate in pedagogy), because of shortages of qualified personnel in some countries, categories for nonqualified teachers have been added to the salary scales.

Salaries and career opportunities within the different categories are directly related to the level of qualification. Teachers entering the profession are placed in a salary scale (category) matching their qualifications and will remain in that scale category for their entire career. It is possible, however, to pass from one scale to another by obtaining the qualifications required to enter a higher category.

- *Responsibility.* The other factor determining the salary scale or grade on which a teacher is placed is the degree of responsibility assumed in the post. This includes different levels of responsibility as a teacher (for example, teaching different subject areas or being named a head teacher), acquiring responsibilities in addition to teaching (for example, supervisory or administrative in nature), or moving from a teaching role to an administrative position. Often different scales exist that correspond to different degrees of responsibility associated with a variety of teaching or administrative assignments. In general, salaries in those scales directly reflect the nature of the responsibility assumed by a teacher in the corresponding position. For example, administrative posts are higher paid than teaching posts.
- *Experience.* While qualifications and responsibility determine the salary scale into which a teacher is placed, it is primarily years of experience in the field that permit teachers to advance within that scale during the course of their careers. Assuming that experience in the profession improves the quality of a teacher, some incremental advance is afforded all teachers for their years of service. Even systems in which advancement is based on merit guarantee a minimum increment to teachers receiving a satisfactory evaluation.

  The amount of time teachers must remain at a given step within the salary scale before advancing to the next and the size of the salary increments vary from country to country. Automatic promotion from one step to the next is common.
- *Performance.* The other criterion determining the level teachers attain within a given salary scale grade is their professional performance. In all countries teachers are evaluated at least once a year. In countries where advancement on the salary scale is based on merit, this evaluation determines salary for the next year. Minimum standards of performance exist across Sub-Saharan Africa, and provisions are also made for penalizing teachers evaluated below those standards. This usually involves denial of a salary increment.

  In summary, the government establishes and regulates the structure of teacher salary scales in relation to other public employees (either directly or indirectly). The individual factors discussed above allow as much as possible an objective placement of teachers on the corresponding salary scale.

Salary Scales

A salary schedule is a statement of policy on remuneration by which the salary of any teacher is determined in accordance with his or her qualifications. The qualifications usually

used are professional and academic preparation and experience. Other qualifications could be sex, marital status, number of dependents, grade level taught, and so forth. The most widely used teacher salary schedule is the unified or single salary schedule.

It is generally held that pay should be determined by the value of work performed. In education, however, it is difficult to determine the "output" and to specify the contribution of an individual teacher to the output. Training and experience, both easily determined, are therefore used as proxies.

The typical unified salary schedule is two-dimensional: training level and experience (see table 3-1).

Table 3-1. The Unified Salary Schedule

Experience		*Training levels*			
Steps	*Years*	*1*	*2*	...	*n*
1	0	S_{11}	S_{21}	...	S_{n1}
2	1	S_{12}	S_{22}	...	S_{n2}
3	2	S_{13}	S_{23}	...	S_{n3}
.	.	.	.		
.	.	.	.		
.	.	.	.		
M	(M-1)	S_{1m}	S_{2m}	...	S_{nm}

S_{11} is the point of entry salary of a teacher with a degree of level one.
S_{1m} is the maximum salary of a teacher with a level one degree.
S_{nm} is the maximum salary of a teacher with a level n degree.

The cost for each level of training is

$$\sum_{i=1}^{m} S_{ij} \times N_{ij}$$

where N_{ij} is the number of teachers of type j in step i.

The cost for all the staff is

$$\sum_{i=1}^{m} \sum_{j=1}^{m} S_{ij} \times N_{ij}$$

An index schedule is a salary schedule in which the minimum and maximum salary and the annual steps as well as the relationships between levels of training, are stated in terms of ratios to the basic salary rather than in monetary amounts (table 3-2).

The relationship between training levels, between minimum and maximum levels, and between increments among the steps are all policy variables that can be used to attract and retain qualified teachers, to encourage professional growth, and within constraints to minimize costs. In theory,[1] the starting salary of a teacher with minimum qualifications (S11) should be

1. The entry salary could be different if the time profile of earnings is also different. In this case, only the present value should be equal.

that of an individual with a similar level of qualifications that had entered some other area of employment where economic advancement is similar to that of a teacher (disregarding, of course, the nonpecuniary benefits of both jobs).

Table 3-2. An Index Salary Schedule

Experience		*Training levels*			
Steps	*Years*	*1*	*2*	...	*n*
1	0	1	1.2	...	1.6
2	1	1.1	1.3	...	1.8
3	2	1.2	1.5	...	2.0
4	3	.	.	...	.
.	.	.	.	...	.
.	.	.	.	...	.
M	(M-1)	2.0	2.4	...	3.0

Similarly, the differential of salaries between levels of training can be calculated by assuming the extra cost of attaining a higher level of training, including the opportunity cost of working and advancing up the scale ladder.[2]

The determination of maximum salaries, the annual increment for experience, the rhythm of these increases, in theory, should depend on the impact of experience on efficiency.

If we accept the assumption of a relationship between years of experience and efficiency, we then face the problem of determining the nature of this relationship. Again, theoretically, we can assume three plausible types of functions relating experience to efficiency (figure 3-1).

In the first case in figure 3-1, teachers' effectiveness increases slowly at first, then accelerates, and later the rate decreases to zero (presumably at the time the salary reaches a maximum). In the second case, experience increases at a decreasing rate, that is, the first year's gains in experience are the largest. In the third case, the increases in effectiveness are constant up to the maximum and then cease altogether. The economic implications for the budget of each of these assumptions is different and depends very much on the age distribution of the teaching force. If the purpose is to minimize costs in the short run and the bulk of the teaching force is young, then the application of assumption I is the most productive. If most teachers are older, assumption II might be more useful.

$$P.V. = \sum_{t=1}^{n} S_t / (1+r)^t = \sum_{t=1}^{n} S_{ot} / (1+r)^t$$

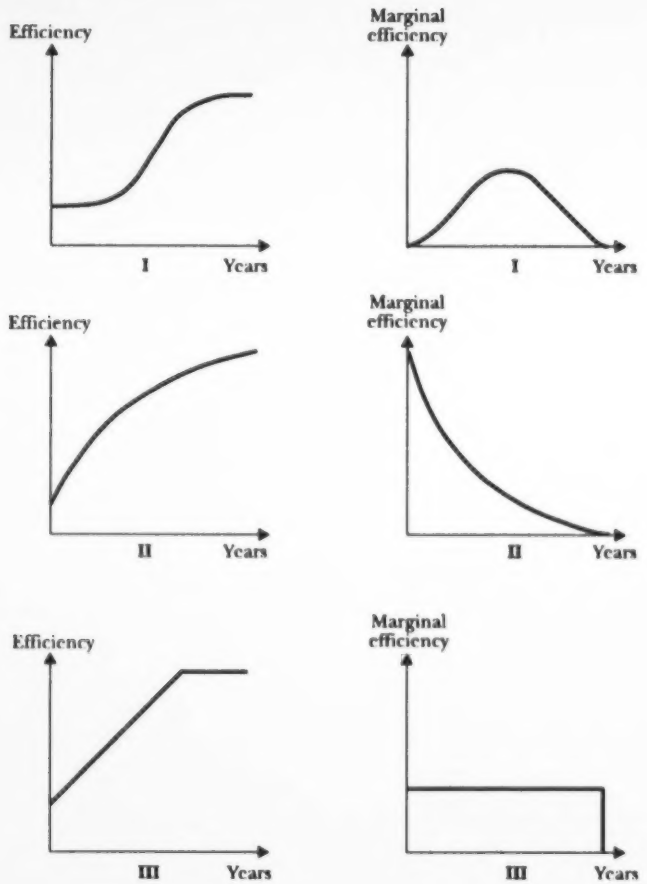
where P.V. = present value, St= salary of teacher at time t, S_{ot}= salary of other occupation at time t, and r = interest rate.

2. The differential can be considered as an annuity received over the employment life of the teacher and should be equal to the foregone earnings and cost of further training.

$$C = \frac{A\left[1 \frac{1}{(1+r)} n\right]}{r}$$

where C = opportunity cost of further training, A = annuity, r = interest rate, and n = number of working years.

Figure 3-1. Total and Marginal Efficiency of Teaching



The maximum/minimum ratio and the differential between categories can also be adjusted for specific purposes. We can affect costs if we can decrease the maximum/minimum ratio by either increasing the minimum, increasing the minimum faster than the maximum, or reducing differentials among different types of training. Another way of compressing the salary scale is to provide an across-the-board increase:

$$\frac{M+X}{N+X} < \frac{M}{N}$$

where M = maximum salary, N = minimum salary, and X = increment.

Besides structuring the salary scale to accommodate the budget, it is possible to adjust the scale to attract better candidates to the teaching profession, to encourage teachers to improve their performance, and to attract teachers into subject areas where demand is greater than supply, for example, science and mathematics teaching. For these purposes, other pay systems

can be instituted: the merit rating system, the subject differential scale, and the differentiated pay scale.

In the *merit system*, salaries are allocated on the basis of differences in performance. Sometimes it means that supplements are added to the unified scale for better than average performance. The basic assumption is that higher pay is an incentive to increase effort and performance.

In the *subject differential* pay scale there are additional steps to compensate or attract teachers with backgrounds in fields where there are severe shortages. In this case, there are three factors determining salary: education, experience, and subject matter.

The *differentiated* pay scale supplies flexibility in the salary structure by providing schedule supplements attached to specialized duties, such as administrative positions or special teaching posts, supervisors, and team leaders, including special salary levels for interns, less than fully-fledged teachers, and so forth.

Each of these systems has its advantages and disadvantages. The unified or single salary schedule is simple and administratively easy to implement. It makes it easy to calculate the budget and teachers feel secure with it. At the same time, however, it ignores supply and demand conditions in specific subject areas and individual performance, and it concentrates only on the individual's education and experience.

The merit system overcomes the latter objections, but only in theory, because evaluation of performance is largely subjective and unreliable. There is the danger that arbitrary judgments of supervisors may lead to favoritism and low morale. Teachers usually feel that higher salaries will go to those that conform to the supervisor's wishes rather than to those that may be doing an outstanding job.

The subject differential salary scale, while solving the problem of scarcities, may imperil teachers' morale, and hence their effectiveness, by creating different "types" of teachers. It may create administrative problems when the scarcity is over.

The differentiated salary scale is attractive for creating new career patterns and for adjusting to new educational technologies and division of labor, but this type of remuneration scale requires a reexamination of educational objectives, criteria of effectiveness, and the role of the teacher. The implementation of this system is also very complex since it requires restructuring the whole system and redefining traditional roles.

Salary incentives are the fundamental, but not the only, variables affecting the attractiveness of the teaching profession. The establishment of better working conditions, the attractiveness of the working place, the adequacy of materials and equipment, higher status, participation in decisionmaking, and so forth are important means for recruiting and retaining good staff.

Supplements to Teacher Salaries

In addition to a base salary determined by the application of the scales explained above, teachers receive various supplemental payments. These additional benefits could include a wide variety of allowances and, in some cases, the accumulated effect of several of these indemnities adds substantially to a teacher's remuneration (up to 30 percent in some Sub-Saharan African countries). The following discussion explains the different types of benefits commonly received by teachers in Sub-Saharan Africa.

Supplements Related to Work

Where teacher salary scales are incorporated into the civil service pay scales and they receive an established percentage differential above the same grade and level of civil servants, that differential is considered a professional supplement. This offers a means to adjust the remuneration of teachers without altering the basic government scales. It is also a

statement that teachers have a higher professional status than equally qualified (that is, educated) civil servants.

A teacher's basic duties consist of a required number of classroom hours of teaching and the ancillary activities associated with that work: preparation of lessons, correction of exercises, and so forth. In addition, teachers may perform a few hours of administrative work per week as a regular part of their jobs. An established regulation usually denotes the minimum and maximum number of hours of teaching and/or administrative work teachers are expected to perform. In some instances, responsibilities assumed beyond the statutory standards are compensated by supplemental payments. For example, teachers working extra hours could receive overtime premiums, or those performing supervisory or administrative tasks in addition to their normal classroom work could receive a responsibility supplement. It is more often the case, however, that different salary scale grades exist for the different levels of responsibility in the school system. Teachers may also be compensated for any nonteaching activities they undertake (for example, coaching, counseling), though extracurricular activities are usually performed on a voluntary basis.

Supplements Related to Welfare

In most Sub-Saharan African countries, educational authorities face problems of staffing schools in remote rural areas. Residential allowances are usually paid to teachers hired to work in these regions. Regions of a country that are difficult to get to and areas that lack commercial facilities and general government services and have no amenities such as running water or electricity present genuine hardships to inhabitants not originally from the area. Teachers can be attracted to accept postings in these more isolated areas only by the offer of a wage differential that would compensate for the hardship conditions.

As in most government jobs, teaching involves accepting the post to which you are assigned and being subject to transfers after a fixed number of years in one location. Perhaps because of this a housing indemnity is offered in almost all Sub-Saharan African countries. In some cases the government guarantees and supplies teachers housing. In other countries, or where it is not possible to provide a dwelling directly, the government supplements teachers' monthly salaries with an allowance either to cover rent or permit the purchase of a house.

In addition to helping ensure housing for teachers, the government usually covers any travel expenses incurred through or for work. For example, travel to and from a new post is paid for as are any official trips, as is travel to obtain services, and in some cases, vacation trips to a designated home region.

Family allowances are a standard component of teacher remuneration. All the countries surveyed provide indemnities for married teachers and dependent children. The amount of the monthly supplement usually depends on the number of children, and in some instances the sex of the parent (in Zaire women are paid a lower family allowance than men). Theoretically, the support per child can increase, stay the same, or decrease with the number of children depending on the assumption about the marginal burden of a child, but in practice, it is determined more by the availability of budgetary resources.

When teachers or their families suffer from illness, the governments in all countries intervene to cover medical expenses and/or provide sick leave. Either medical treatment is provided free of charge to teachers and their dependents at state hospitals or the government reimburses all or a designated percentage on the costs (for example, 80 percent) or the cost of treatment in a private facility. Sick leave with pay is normally permitted for a set period (three to six months), and additional leave at half pay (three to six months also) would follow that initial period if more time off was necessary. Beyond the established limit of sick leave, if a teacher continued to be absent for medical reasons, it would be without pay.

Maternity leave is available everywhere and usually ranges from twelve to fourteen weeks with some time off allowed before giving birth and some designated for afterwards. This leave is provided at full pay, or at least at half pay.

As discussed earlier, passage from one salary grade to another usually calls for the successful completion of the qualifications that the higher grade requires. In an effort to encourage teachers to upgrade their qualifications, some countries provide a study allowance for teachers to continue their education. This allowance can take the form of free tuition, a scholarship to cover tuition and/or room and board, or the payment of all or part of a teacher's salary while he or she is in school or participating in in-service training.

Supplementary payments are established either as absolute fixed amounts or as a given percentage of the base salary. An absolute allowance usually takes the form of a determined monthly allotment. The size of the allotment is determined by a teacher's place on the salary scale, with teachers in the higher grades receiving larger monthly payments. If the monthly allowance is established as a percentage of a teacher's earnings, then people at higher grades and higher steps on the salary scale would automatically receive larger allowances.

Conclusion

The payment a teacher receives for his or her services is the outcome of a complicated interaction of many factors: personal characteristics of the teacher (education, training, experience, number of children in the household, and so forth); government policies specific to the education sector and those affecting all civil servants; and salary scales for teachers, which can adopt all types of shapes and forms. It is very difficult to generalize about the final result of this interaction as the result will vary with the value of each parameter. For an analysis of the interaction of these factors in Sub-Saharan Africa see chapter 8.

4

TEACHER COMPENSATION IN DEVELOPING COUNTRIES

Alejandra Cox Edwards

During the last twenty years, we have witnessed the great efforts made by developing countries to educate their populations. Nonetheless, in some areas educational services are still available only to a very limited portion of the eligible age groups. Moreover, economic conditions in developing countries have currently reduced the availability of public funds, and it is therefore essential that their limited resources be efficiently allocated across sectors and efficiently used within sectors. Thus, the educational policymaker has a twofold task: first, to find ways of reallocating funds within the educational system so as to generate an increased social return on the investment, and second, to determine what portion of the educational system should be publicly financed using social equity and efficiency criteria.

To address the first task, while bearing in mind that teachers' salaries normally represent about 90 percent of the government's cost of primary education and 65 percent of the government's cost of secondary education (see Wolff 1984), let us consider the teacher remuneration policy. Two broad areas of policy choice are considered here: the overall level of teacher remuneration within a nation (in relation to other occupations), and differential levels of remuneration within the teaching force.

The analysis of teachers' salaries is both sector and country specific. Systems are usually highly unionized and dominated by public sector employment. On the one hand, fringe benefits tend to be more significant than in other occupations. Often teaching offers greater job security and more flexible hours. On the other hand, working conditions can make teaching less attractive than other occupations with the same compensation because of severely overcrowded classrooms, lack of adequate teaching materials, or professional and social isolation in rural areas. In short, since monetary wages are only one dimension of labor compensation, differences in teachers' salaries relative to other occupations that require the same training may not reflect actual differences in total compensation.

The Economic Role of Individual Wages

In a free market, wages are determined by the interaction of demand and supply. Employers would not compensate a worker above the value of the worker's contribution, and workers would not take jobs if they were not compensated as well as they might be in a comparable job. The equilibrium wage has a fundamental role, which is to ensure efficient allocation of the labor force. Once an individual gets a job where he or she procures the highest compensation (and makes the greatest contribution), he or she is highly motivated to perform in a way that will ensure job retention. This is a key role of individual wages, including monetary and nonmonetary compensation.

Market conditions constantly change. Some of the changes occur independently of the individual's behavior; others are initiated by the individual. For example, opportunities for the individual worker may occur in another job. As long as the worker's contribution in the new

job is higher than in the current job, he or she and society will be better off if the worker moves. Alternatively, the individual can increase the level of effort on the current job and, if rewarded, will be more likely to maintain the higher level of effort. By the same token, reduced effort that is not recognized and does not affect compensation will become the norm, and individuals will perform below their potential.

If a job requires demanding training, the compensation will have to be high enough to induce individuals to undertake such training. Then again, if the demand for a certain skill declines, individuals having that skill will eventually suffer wage reduction. In other words, wages act as signals to move the labor force from sectors of declining demand toward sectors of increasing demand. This is another key role of individual wages.

If an employer offers wages above market level (that is, above the minimum required to fill vacancies), more workers will apply for the job than the number of openings, and unemployment will result. If an employer offers wages below market level, vacancies will go unfilled. Market equilibrium wages are necessary to balance the preferences of workers (or potential workers) with the demand for labor services.

Workers, however, are generally organized into unions, and therefore market equilibrium wages balance the preferences of the union with the demand for labor services. Insofar as the union's purpose is to protect its members and to obtain the highest possible compensation for them, it is in its interest to limit the number of workers in order to maintain a relatively high wage for each member. If teachers' unions have monopolistic power (power to limit supply), they can set a level of salaries above the one the market would have set. Labor will then be inefficiently allocated because not enough teachers will be employed.

One legal device that protects a union's monopolistic power is through a law that requires a permit to teach and, at the same time, gives unions control over the number of permits distributed. Not all unions have substantial monopolistic power, but given that entry restrictions have the effect of raising market wages, we should be aware of disguised arguments, especially if they are offered by active teachers, about having to restrict the number of students who are to become teachers. This is a tricky issue, because entry restrictions that raise salaries may have the effect of attracting people with higher qualifications, and so improve the quality of teaching. Unfortunately, however, the economy as a whole would be paying too high a price for that improvement because fewer teachers would be employed.

The Economics of the Market for Teachers' Services

Teachers are employed because they contribute to the educational process. Therefore, the demand for teachers' services depends upon the demand for education. Educational services are offered by both the private and public sectors; consequently, the two sectors compete both in the educational process and in the demand for teachers' services. In countries where the private and the public sectors coexist as providers of education, teachers' compensation in both sectors will generally be the same because teachers have the alternative of moving from one sector to the other when salaries are not competitive.

With some consistency in the employment of teachers per student educated, the demand for teachers is closely correlated to population trends and to the coverage of the educational system. Depending also on economic conditions, the demand for certain types of teachers will suddenly accelerate, for example, reduction in the size of families and the increased participation of women in the labor force has created a growing demand for preschool child care, and consequently for preschool teachers.

On the supply side, several studies have addressed the question of what determines the number of people willing to be trained as teachers and willing to remain in the educational sector. Zabalza, Turnbull, and Williams (1979), in a study of the labor market for school teachers in England and Wales, estimated the supply of new entrants with respect to various wage variables and found positive supply responses to teachers' wages relative to alternative wages. Freeman (1976, 1975, 1971), who has done exceptional work on occupational choice,

postulates that new entrants look closely at starting salaries when making their occupational decision and that changes in starting salaries profoundly affect occupational choices.

Zarkin (1985) developed a model for the U.S. teachers' market in which agents consider both starting salaries and future predictable conditions to form a rational estimate of their future relative wage. For public school teachers, the leading variable in arriving at this estimate is the number of children enrolled, which is determined by the number of children born. Zarkin's empirical results strongly support the hypothesis. The expected level of public expenditure on education is another significant variable affecting entry into the teachers' market.

It seems, then, that the teachers' market should be able to adjust to changes in the student population and so forth provided that compensation reflects the variations in the state of the market. Adjustment problems might arise, however, if either teachers' salaries are determined by some nonmarket criterion or there are barriers to market adjustment. For example, teacher training facilities may be legally obliged to expand enrollment, they may be managed in a way that is not responsive to market forces, or unions may not grant enough qualifying certificates.

Markets will always find a way to adjust to new conditions. Sometimes they adjust in an inefficient way. For example, if demand increases and wages are kept constant, filling the vacancies will be difficult. A likely consequence is that employers will start reducing the standards and hiring workers with lower qualifications. At the other extreme, if demand falls and wages are not adjusted downward, there will be increased unemployment. Of course, it is not easy to predict rapid increases in the coverage of the educational system, and in the short run countries may have to turn to foreign teachers or to untrained nationals.

Although it is important to understand what variables determine entry to the teachers' market, there is an important difference between changes in teachers' supply and entry of newly graduated teachers. Most countries have a significant number of qualified teachers who do not participate in the labor force permanently. This makes the supply of teachers highly responsive (elastic) to changes in demand or changes in salaries. In some developing countries, however, the scarcity of a qualified work force is such that we cannot assume an elastic supply of teachers. Indeed, some countries in the process of expanding their educational system choose to employ untrained teachers. In Kenya, for example, over 30 percent of primary school teachers are untrained (Bertrand and Griffin 1984).

What all this means is that in studying market wages, many tradeoffs should be considered. As long as we are aware of these, then policy decisions will generate expected results. Consider, for example, a policy that tries to reduce teachers' salaries by increasing the supply of teachers by subsidizing teacher studies. The problem with this policy is that there is no guarantee that all qualified teachers will take teaching positions. Individuals can use their teaching qualifications to take administrative positions for which they also qualify. As a result, the subsidy will not be cost-effective. A more cost-effective way of reducing teachers' salaries is to reduce their qualification requirement. Of course, many will be unwilling to make that kind of concession, but then they have to be aware of the higher cost of the alternative policy.

Teachers' Salaries Relative to Other Salaries

In policy-oriented discussions we are confronted with the question: are teachers' salaries too high or too low? The answer must always be preceded by another question: with respect to what? From an economic point of view, an interesting approach is to find out whether teachers' salaries are high relative to market conditions. Answering this question involves two types of complementary analysis: teachers' salaries can be compared to other salaries, and other indicators of the state of the market for teachers' services can be studied, for example, we can use unemployment data to determine whether there is an excess supply of teachers at the going salary level.

- *Persistent differences in remuneration and "compensating."* If a job requires a minimum level of education or training, it must offer individuals salaries that are high enough to

compensate for the cost of training. Therefore, we can expect differences in earnings across occupations in relation to differences in education levels required. Since wages are only one dimension of labor compensation, and number of hours is also just one of many job characteristics, we will have to allow for differences in wages to compensate for other characteristics of the job in addition to the required level of education and the years of experience.

- *Differences in pay and temporary differences that arise in response to cyclical phenomena or changing market conditions.* A rapid increase in school enrollment results in a scarcity of teachers. Teachers' salaries will rise, attracting more people into teaching, until the scarcity dissipates and teachers' salaries return to their initial level. Zarkin (1985) has shown that changes in the demand for teachers induced either by population growth or by long-term government policies are internalized in the form of anticipated salary changes, and by themselves induce a change in teachers' supply, even before the salary change has occurred. If teachers' salaries remain higher than the market for a long time, we should look for barriers to the expansion of the supply of teachers. Moreover, if the high salaries are accompanied by more unfilled vacancies, we should not seek to reduce teachers' salaries, but rather find a way to increase teachers' benefits. A decline in school enrollment will generate an excess of teachers, and we may see teachers' salaries falling relative to other sectors. If this is the scenario, we should not advise increasing salaries, but rather waiting for the market adjustment. To put teachers' salaries in line with the market in these circumstances would make the adjustment longer, and possibly more painful. The fear is that in such circumstances the educational sector may lose its best teachers, because the best teachers probably become the best administrators and researchers in other sectors.
- *"Uncompensated" differences in salaries (or recognizing when the level of teachers' salaries is out of line with the market).* If teachers' salaries change relative to other salaries without pressure from market forces, or if despite changing market conditions teachers' salaries remain constant, then there must be barriers to market adjustment. For example, teachers' salaries may increase along with unemployment of teachers, or teachers' salaries may decline despite unfilled vacancies. We should then look for the origins of the barriers to adjustment and try to remove them. Persistent restriction to the free choice of occupation or persistent intervention on the scale of salaries may well create a situation where salaries are out of line with the market and will not move toward equilibrium. These types of salary differences distort the market for teachers' services, and by any criterion of economic efficiency, they should be removed. High salaries accompanied by teachers' unemployment indicate that there is a floor to teachers' salaries. This floor may be established by a public sector pay scale, and under certain circumstances the pay scale should be modified. Alternatively, the pay scale may be established by a powerful union, and in this instance high salaries that persist for a long time may not be accompanied by unemployment if they result from entry barriers to obtaining teachers' certification. Low salaries that persist and are accompanied by unfilled vacancies indicate the presence of some type of legal ceiling to teachers' salaries. This legal ceiling may be the result of applying a public sector pay scale that does not treat teachers well.

Analysis of Hypothetical Cases

The preceding analysis indicates that the evaluation of teachers' salaries in relationship either to their "appropriate" level or to a level consistent with market conditions is not simple. In making an assessment we should combine data on salaries, other fringe benefits, vacancies, and unemployment. Moreover, the market for teachers' services is an aggregate of closely linked, more specific markets, for example, the market for math teachers, the market for

teachers in the northeast of the country, and so forth. Therefore, there will be market-determined differences in salaries across regions, and across subject areas.

- *Differences in teachers' salaries across regions.* If the government is seriously interested in filling all the vacancies, there is a need for a wage premium. To determine the minimum level at which employees will be attracted, it is necessary to study the regional market. Government jobs must be competitive within the region, and if budget constraints render a salary increase out of the question, then the number of job openings should be reduced or the minimum qualifications reduced.
- *Differences in teachers' salaries across subject areas.* Whenever there are problems filling vacancies in a particular teaching subject (science, for example), it is likely that the salary is too low. Before raising the salary, however, alternative possibilities should be considered:
  - Reducing the level of specialization in the subject so that other types of teachers qualify;
  - Increasing the level of nonmonetary benefits;
  - Changing the teacher/student ratio in the problem subject (for example, by using extra teachers' aides).

Teachers' Salaries Relative to Income per Capita and the Relative Cost of Education in Developing Countries

Making salary comparisons across countries is a complicated task. To begin with, a common unit has to be used for measurement. If, for example, we use U.S. dollars, we need an exchange rate for each country's currency. As indicated by Lipsey and Kravis (1982), official exchange rates do not provide appropriate comparisons, and for this reason cross-country comparisons are often made using a ratio that represents teachers' salaries relative to income per capita to avoid exchange rate conversions. Nevertheless, there is no reason to expect equal ratios across countries. On the contrary, one would expect the ratio of service job salaries to average income to be higher in developing countries.

Data available on salary levels for the educational sector (using direct sources) tell us that teachers' salaries are, as a proportion of the gross national product (GNP) per capita, generally higher in developing countries (and particularly in African countries) than in more developed countries. Aside from exchange conversion rates, there are several reasons why the analyst may be interested in the ratio of teachers' salaries to GNP per capita. First, relative salaries can be compared to relative productivity, and as will be shown in this section, differences in relative salaries are, to a large extent, justified by differences in relative productivity. Second, the comparison of teachers' salaries across countries allows us to estimate the importance that different countries attach to the education of their population.

Data on Teachers' Salaries for Some Developing Countries

Several studies have concluded that the unit cost of education is high in developing countries, particularly in West Africa (Zymelman 1982; Minedaf 1981; Meerman 1980) because of high teachers' salaries. The fact that the ratio of teachers' salaries to GNP is higher in developing countries has led to the conviction that teachers' salaries in developing countries should be the target when improving cost-efficiency in the educational sector.[1] This chapter

1. If the question is are teachers' salaries high or low in developing countries, then comparison of salaries will not answer it. First, such a comparison does not deal with the main issue, that is, are teachers' salaries relatively high or low within a country? In addition, if teachers were perfectly mobile across countries, their salaries plus compensating differentials (cost of living, fringe benefits, and so forth) should equalize across countries. Yet the ratios of salaries to income per capita would show a large variation across countries mainly due to the differences in the denominator.

offers a different interpretation of the evidence on cross-country comparisons, and we argue that international comparisons of teachers' salaries relative to income per capita will not allow us to recognize which countries are paying too much for teachers' services (Lipsey and Kravis 1982).

Heller and Tait (1983) published important data about relative salaries of employees in different sectors of the economy (particularly government) for various countries. Based on their and other findings, we have prepared a set of tables focusing on the educational sector.

The most readily calculable measure of the relative pay of teachers comes from estimates of the average wage in education, including all employees in the educational sector along with teachers. Table 4-1 presents the average wage in education relative to income per capita, average central government wage, average wage in manufacturing, and average wage of employees outside central government. With the exception of the ratio of average wage in education to average central government wages, teachers' salaries show a large variation across countries. If we concentrate, for example, on the ratio of wages in education to average GNP per capita, we get numbers ranging from 1.4 (Iceland) to 7.6 (Zimbabwe). In the Organisation for Economic Co-operation and Development (OECD) countries, the average wage in education divided by GNP per capita is approximately 1.6; in developing countries it is approximately 3.3 (4.1 for African countries and 3.4 for Latin American countries).

Table 4-1. Indicators of Relative Salaries of Employees in the Education Sector, Selected Countries

			Ratio of average wages in education to:			
Country	*Year*	*Income per capita (US$)*	*Income per capita*	*Average central government wage*	*Average wage in manufacturing*	*Average wage of employees outside central government*
Canada	1981	11,400	1.57	1.07	1.20	1.39
Iceland	1980	11,330	1.37	0.98	-	-
Japan	1980	9,890	2.14	1.12	1.63	1.98
New Zealand	1981	7,700	1.57	1.01	1.14	0.78
United States	1981	12,820	1.45	1.37	1.52	1.49
Kenya	1980	420	4.42	0.97	0.92	0.91
Liberia	1982	490	6.51	1.13	-	-
Mauritius	1980	1,060	1.91	1.12	2.90	0.76
South Africa	1982	2,670	3.94	0.54	0.97	0.62
Swaziland	1982	940	2.95	1.19	0.66	1.24
Togo	1980	410	5.19	0.78	-	0.27
Uganda	1982	230	1.47	1.46	-	-
Zambia	1980	560	4.67	1.46	1.40	0.54
Zimbabwe	1979	470	7.57	1.47	0.86	1.74
Korea	1981	1,700	1.62	2.22	2.02	9.77
Singapore	1981	5,240	1.23	1.49	-	-
Sri Lanka	1980	270	1.64	1.48	1.65	0.96
Cyprus	1980	3,560	2.75	1.19	2.52	-
Bahrain	1980	5,560	2.31	0.81	0.38	-
Oman	1980	4,380	2.38	0.64	-	-
Argentina	1981	2,560	2.13	0.61	3.22	0.73
Bahamas	1978	2,520	3.36	0.97	1.44	-
Ecuador	1980	1,270	2.49	1.15	1.54	1.29
El Salvador	1982	700	4.64	1.24	1.85	-
Jamaica	1980	1,040	4.99	0.97	-	1.75
Panama	1979	1,400	3.28	0.94	1.54	1.68
St. Lucia	1981	970	2.92	1.04	-	-

- = not available

Source: Constructed from data in Heller and Tait (1983).

Average wages in education relative to average central government wages are less variable across countries. For OECD countries the ratio is 1.11, while for developing countries it is 1.06 (1.12 for African countries and 0.99 for Latin American countries). In other words, both developing and developed countries pay teachers relative to what they pay their public sector employees.

Table 4-2 shows estimates of teachers' salaries in selected African countries as presented in Wolff (1984). There, teachers' salaries are estimated using UNESCO (1981) data on teachers' employment by country, cost of education per student, and student/teacher ratios. The evidence is consistent with table 4-1: teachers' salaries relative to GNP per capita show a large variation across countries. In particular, we obtain a negative relationship between the ratio of teachers' salaries and the level of GNP per capita.

Table 4-2. Indicators of Relative Teacher Salaries in Selected Countries

			Ratio of average wages in education to:	
Country	*Year*	*Income per capita (US$)*	*Income per capita*	*Average wage in manufacturing*
Botswana	1979	780	6.03	2.23
Burundi	1980	230	9.89	1.85
Comoros	1979	260	8.21	-
Ethiopia	1981	140	13.71	1.95
Kenya	1980	390	5.36	1.07
Lesotho	1982	540	4.13	-
Malawi	1981	200	4.70	1.23
Mauritius	1979	1,080	2.26	1.65
Rwanda	1980	220	5.61	-
Somalia	1982	280	2.14	-
Sudan	1980	360	3.55	-
Swaziland	1981	760	3.85	0.95
Uganda	1981	220	2.16	-
Zambia	1980	580	5.90	1.37
Zimbabwe	1981	870	7.36	1.50

- = not available

Source: Wolff (1984, tables 7 and 8). The averages for teachers' salaries in primary and secondary education are estimated using UNESCO (1981) data on teachers' employment by country and level. The data on wages in education for East African countries correspond to teachers' salaries.

We also looked at the relationship between salaries and the size of the employment sector. The simple correlation between ratio of wages in education to income per capita and the share of the labor force in services is negative. Teachers are an educated minority in the labor force in less developed countries, and that explains the higher ratio of teachers' salaries.

Countries with low income per capita and large agricultural sectors show large differences in productivity between the industrial and service sectors and the primary sectors. As countries develop, the distribution of the labor force shifts toward the industrial and service sectors, and relative productivity in all three sectors tends to converge on unity (Chenery and Syrquin 1975).

Figures for relative productivity can be calculated from national accounts and employment data. In this paper, we use production and employment data published by the World Bank (1984).

As is evident in table 4-3, there are large differences in relative productivity across sectors within countries. At the same time, the service sector is generally more productive (compared to the rest of the economy) in developing countries than in OECD countries. The average relative productivity in services is 100.7 for OECD countries and 172.8 for developing countries (217.8 for African countries and 133.9 for Latin American countries).

Table 4-3. Index of Relative Productivity by Sector, 1980
(aggregate productivity = 100)

Country	*Agriculture*	*Industry*	*Services*
Canada	80.0	113.8	95.5
Japan	33.3	110.3	108.2
New Zealand	122.2	88.6	103.6
United States	150.0	106.2	95.4
Kenya	41.0	210.0	391.7
Liberia	51.4	221.4	206.3
South Africa	23.3	182.8	97.6
Togo	38.8	133.3	300.0
Uganda	91.6	100.0	163.6
Zambia	22.4	354.5	209.1
Zimbabwe	20.0	260.0	196.0
Korea	47.1	141.4	116.2
Singapore	50.0	94.9	105.1
Sri Lanka	51.8	214.3	131.3
Argentina	69.2	135.7	89.8
Ecuador	25.0	223.5	158.1
El Salvador	54.0	95.5	192.6
Jamaica	38.1	148.0	103.8
Panama	37.0	116.7	125.4

Note: Sector value added as a percentage of gross domestic product. Sector labor force as a percentage of total labor force.

Source: World Bank (1983, 1982).

On the one hand, differentials in relative productivity are consistent and are manifested across sectors in average wages relative to income per capita. On the other hand, there is a dynamic relationship between these relative wages (or productivity) and the distribution of the labor force. One hypothesis that can be tested is that differences in relative productivity tend to decline as the labor force moves toward the high productivity sectors.[2] Therefore, in the case of services, we would expect a negative relationship between the employment share in

2. The hypothesis could also be stated in terms of relative wages reflecting scarcity of a given type of labor. As that type of labor became more available, the relative scarcity would be reduced, and thus the relative wage would be reduced too.

services and relative productivity in the same sector. This hypothesis can be tested (see appendix). Tests of the hypothesis that differences in relative productivity tend to decline as the labor force moves toward high productivity sectors have proven, in twenty-six cases, that it does.

Are Teachers' Salaries too High in Developing Countries?

Analysis (as set out in the appendix) indicates that differences in teachers' salaries relative to GNP per capita are economically justified. It also suggests that as a country develops, or as the share of the labor force in services increases, the ratio of wages in education to GNP per capita falls. This evidence makes clear the difficulty poor countries face in financing the education sector. If they were to employ teachers in the way that more developed countries do, their relative effort (measured in units of income per capita) would be higher and the difference would be proportional to their differences in teachers' salaries relative to GNP.[3]

At the same time, there are other determinants of wage differentials, such as the size of the public sector, measured by the ratio of government expenditure to the gross domestic product (GDP), which is positively correlated to the level of relative wages in services. This evidence may suggest that teachers' salaries, along with other public sector wages, are in some sense protected by governments. It would be premature, however, to draw a conclusion from this evidence alone. We must first understand how teachers' salaries are determined, and so indicate whether teachers' salaries can or should be altered so that educational costs fall in relative terms.

How Do Governments Determine Pay Scales?

Different models have been developed relating pay in the public sector to factors ranging from the wishes of voters to the possibility of bribery of civil servants (see, for example, Buchanan 1977; Courant, Gramlich, and Rubinfeld 1979; Fogel and Lewin 1974); Reder 1975. Modeling the pay behavior of the public sector, however, introduces the constraint imposed by the presence of the private sector: private sector wages, worker mobility between the private and public sector, and the behavior of taxpayers. Therefore, if public sector wages are not in line with those prevailing in the rest of the economy, some equilibrium mechanism will operate.

If public sector wages are low relative to private sector wages, the labor force attracted to the public sector will be of lower quality and/or will fight for more fringe benefits. In the process, vacancies in the public sector will be difficult to fill. If the public sector offers higher wages than those in the private sector, there will be too many applicants for jobs, and public employers will be able to raise hiring standards. If the bureaucracy is slow adjusting to wages, some of the job applicants will become unemployed.

Teacher Pay Scales, Local Administration of Public Education, and the Settling of Teachers' Contracts

Normally, public sector pay scales classify employees according to years of experience and education. This basic classification puts each employee in a specific cell to which a basic salary is assigned. Some cells will then have salary variations to compensate for such categories as responsibility or administrative duties, thus giving local administrators some authority over salary determination. Sometimes the public sector creates salary variations by region through a multiplying factor that significantly increases salaries for the least attractive regions.

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3. Preliminary evidence seems to indicate that student/teacher ratios tend to be higher in countries with a smaller pool of qualified teachers relative to the number of students.

Pay scales have several advantages, but at the same time, they can introduce serious problems. On the positive side, they provide a set of simple rules for determining individual salaries. On the negative side, they take time to adjust. But a more important problem is that if not used properly, pay scales may generate a poor set of incentives. Thus, a serious argument in favor of local administration (but not necessarily local financing) of schools has to do with the local knowledge of both local market conditions and available resources within the established budget. Detailed information on the most appropriate compensation mix in terms of salaries and other characteristics for a job offer are harder to deal with at the aggregate level.

Summary Notes

Teacher's salaries play a fundamental role in the allocation of scarce educated labor resources. They help to keep in balance the needs of society, whether society benefits by having persons employed as teachers against the opportunity cost of having them in other activities. Pay scales should be based not on education and experience alone, but on a formula that serves better the purpose of individual salaries as a resource allocation. Aside from differences in education and experience, such a formula should, as a minimum, make distinctions in teachers' salaries according to location. Moreover, to the extent feasible, it should reward individual performance instead of offering a predetermined wage path.

Cross-country comparisons of teachers' salaries do not allow us to conclude that salaries are "high" or "low" in a given country. To answer that question (so we argued), it is necessary to study the labor market in that country. Cross-country comparisons do, however, demonstrate other important aspects of teachers' salaries in developing countries. In particular, the ratio of teachers' salaries to GNP per capita is higher among developing countries and is negatively correlated to the level of GNP per capita. This difference in relative salaries is consistent with differences in relative productivity across countries. As income per capita increases, the supply of teachers relative to other activities increases too.

Differences in the ratio of teachers' salaries over GNP per capita indicate differences in efforts that countries make to educate their population. To the extent that teachers are scarce and their salaries high, investment in higher education (teachers and others) offers a high return. Since the net return on the investment depends on the cost of resources used (including teachers), developing countries should intensify the use of teachers' aides in order to use teachers more effectively.

As a consequence of the distortions related to investment in human capital, governments have to be careful with their use of subsidies in higher education. There is no need to subsidize a project with positive private returns. The argument that is used to subsidize higher education is generally one of equality. Subsidies open the doors of higher education to deserving individuals who lack other sources of financing. Although this is true, the same result can be achieved by offering loans. At least three problems are avoided by using loans rather than subsidies: the danger of overinvestment in education is reduced, minimizing the phenomenon of the educated unemployed; the subsidy to individuals who can otherwise afford to pay for their education is saved; and the societal loss generated by the emigration of educated individuals who have received a subsidized education is avoided.

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Appendix

Testing of the Hypothesis that Differences in Relative Productivity Tend to Decline as the Labor Force Moves toward Higher Productivity Sectors Using Twenty-six Cases

Two sets of ordinary least squares (OLS) regressions were estimated, with average wages in education (AWE) relative to GNP per capita (GNP/c) as dependent variable (AWE/GNP/c) in both linear and semi-logarithmic forms.

In one set of equations, the following three independent variables were included:

- The size of the services sector (LS), measured as a proportion of the aggregate labor force (LA) employed there (LS/LA). This variable is expected to be negatively related to wages in services because our hypothesis is that labor force movements drive the changes in relative wages.
- The size of government, measured by the ratio of government expenditure to total expenditure (GE/GDP), included to capture a possible relationship between government expenditure and teachers' salaries through the impact of government expenditure on government wages and (indirectly or directly) on teachers' salaries. A positive relationship can be interpreted as the effect of a powerful government workers' union.
- A dummy for francophone African countries (DF), which is expected to affect positively relative teachers' salaries. This variable is introduced to capture the effect of government pay scales, established to encourage French public sector employees to serve in foreign countries.

The results in table 4-4 confirm the hypothesis already presented. Using the point estimates of the coefficients in equation 1, one can argue that for a country with 25 percent of the labor force in the services sector and a 35 percent ratio of government expenditure to GDP, the average ratio of wages in education will be 5.248 [= 3.27 - 6.97(0.25) + 10.63(0.35)] times income per capita.

It is interesting to note the high level of explanatory power of these simple equations. R squared values in the 50 percent range are high for cross-section analysis. In the second set of equations, the variable LS/LA is replaced by the variable "relative productivity within the services sector" (RPS). In this set, we expect a positive relationship between relative teachers' salaries and RPS. The best estimates were obtained with the semi-logarithmic specification. Equation 3 in table 4-4 suggests that a difference of 1 in the proportion of the labor force in services explains a 2.1 percent difference in the ratio of wages in education to GDP per capita, given the same size of the public sector.

The results in table 4-4 also indicate that the more developed the group of countries, the larger will be the share of labor force in services, and, therefore, the expected ratio of wages in education relative to income per capita will be smaller. At the same time, the larger the share of government expenditure in total expenditure, the larger the expected ratio of wages in education to income per capita. The first relationship reflects the interaction between prices

Table 4-4 . Estimated Functional Relationships for Average Wages in Education (AWE) as a Proportion of Gross Domestic Product per Capita (GDP/c) and Other Variables

Equation 1:		$\frac{AWE}{GDP/c}$	=	3.27 -	6.97	$\frac{LS}{LA}$	+	10.63	$\frac{GE}{GDP}$	+ 3.22 DP		$\overline{R^2}$ = 0.57 N = 26 F = 11.04
		t statistics:			(-3.90)			(3.25)		(2.67)		
Equation 2:		$\frac{AWE}{GDP/c}$	=	4.24 -	8.25	$\frac{LS}{LA}$	+	9.32	$\frac{GE}{GDP}$			$\overline{R^2}$ = 0.47 N = 26 F = 11.01
		t statistics:			(4.35)			(2.67)				
Equation 3:	*ln*	$\frac{AWE}{GDP/c}$	=	1.05 -	2.10	$\frac{LS}{LA}$	+	2.99	$\frac{GE}{GDP}$	+ 0.61 DF		$\overline{R^2}$ = 0.60 N = 26 F = 12.79
		t statistics:			(4.67)			(3.65)		(1.86)		
Equation 4:	*ln*	$\frac{AWE}{GDP/c}$	=	1.24 -	2.34	$\frac{LS}{LA}$	+	2.74	$\frac{GE}{GDP}$	+ 0.61 DF		$\overline{R^2}$ = 0.56 N = 26 F = 15.76
		t statistics:			(5.17)			(3.22)				
Equation 5:		$\frac{AWE}{GDP/c}$	=	-0.38 +	1.09 RPS		+	8.34	$\frac{GE}{GDP}$	+ 2.79 DF		$\overline{R^2}$ = 0.47 N = 25 F = 7.42
		t statistics:			(2.87)			(2.26)				
Equation 6:		$\frac{AWE}{GDP/c}$	=	-0.39 +	1.38 RPS		+	7.03	$\frac{GE}{GDP}$			$\overline{R^2}$ = 0.41 N = 25 F = 8.60
		t statistics:			(3.83)			(1.84)				
Equation 7:	*ln*	$\frac{AWE}{GDP/c}$	=	-0.05 +	0.34 RPS		+	2.26	$\frac{GE}{GDP}$	+ 0.47 DF		$\overline{R^2}$ = 0.49 N = 25 F = 8.09
		t statistics:			(2.87)			(2.38)				
Equation 8:	*ln*	$\frac{AWE}{GDP/c}$	=	-0.05 +	0.39 RPS		+	2.03	$\frac{GE}{GDP}$	+ 2.79 DF		$\overline{R^2}$ = 0.48 N = 25 F = 11.24
		t statistics:			(4.33)			(2.16)				

Sources: The sample includes Canada, Japan, New Zealand, United States, Liberia, Kenya (1979, 1980), South Africa, Uganda (1981, 1982), Zambia (1980, 1981), Zimbabwe (1979, 1981), Korea, Singapore, Sri Lanka, Ecuador, Argentina, El Salvador, Jamaica, Burundi, Cameroon, Malawi, Rwanda, Sudan.

and quantities in a dynamic process. The second indicates that for a given level of development, the larger the size of government, the larger are relative wages in education.

Equation 5 is especially interesting. It shows the close relationship between relative wages in education and relative productivity in services, with a coefficient of 1.09. It makes clear that a large variation in relative wages in education across countries, and particularly between more and less developed countries, is granted because of the differences in relative productivity.

5

Influences on the Choice of a Teaching Career: An Analysis from an International Perspective of the French Experience

François Orivel and Jean Perrot

In the mid-1970s in France, some 70,000 candidates applied for teaching positions at the secondary level; however, in contrast to twenty years earlier, when virtually anyone who had had some university education could get a teaching position, only a few were accepted. In 1979, for example, the success rate at the two grades of secondary level was less than 5 percent. By the 1980s the wheel had come full circle, with a diminishing number of candidates seeking an increasing number of teaching positions. In France then, we are facing a possible teacher shortage, and the purpose of this chapter is to determine the reasons for the shortage and to investigate whether this is a problem peculiar to France.

Information about the Teaching Profession

- Teacher salaries are now approximately 1.5 times the gross national product per capita, whereas in the past they significantly exceeded that figure. This is due partly to a reduction in the number of poorly compensated jobs (for example, blue collar jobs, agriculture) and partly to large pay increases for such jobs. At the same time, some of the benefits that teachers have enjoyed (for example, early pensions) have been extended to other job categories, and some loss of authority and prestige has made the teacher's life less satisfying. In short, teaching has become financially, occupationally, and socially less attractive than it was.
- In developed countries, many women choose careers in the teaching profession, especially at the elementary school level, because the timetable and vacation schedule allow them to look after their own school-age children. Recently, however, with modifications in family roles, more and more women are now looking to fields that previously had been dominated by men.
- The shortage of teachers does not affect all subjects to the same degree. In OECD countries there are not enough science and technology teachers and often a surfeit of teachers in other subjects. To date, however, no clear policy has been established for basing teachers' salaries on subject area, although such a policy has much to recommend it.
- Finally, it should be emphasized that the magnitude of the teacher shortage problem varies from one country to another. It is most acute in the United States, the United Kingdom, and France. Not far behind are Italy, Spain, Portugal, and Greece.

The first country in recent times to improve the prospects of the teaching profession has been the United States. After a wage decline in constant dollars since the 1960s, there has been a substantial increase (since 1983) in teachers' salaries. Whether this increase will be sufficient to eliminate the teacher shortage, however, remains to be seen.

In France, the changes of the past ten years have exacerbated the failure of primary teaching to attract candidates. Prior to these changes, the teaching profession, despite modest salaries, was economically appealing for three reasons: no tuition cost for training, salary paid during training, and retirement at age 55. Now, however, these benefits barely exist and no other kind of compensation has been introduced in their place. In particular, loss of the early retirement benefit has eliminated a powerful inducement; for whereas most teachers now retire at age 60 (five years later than before), many others in the work force are also retiring at 60 (five years earlier than before). Thus, teaching has ceased to compare so favorably with other jobs with respect to career closure.

The Significance of Salaries

The impact of salary levels on the teaching profession is revealing. What is evident is that if teachers' salaries exhibit a marked drop compared to other salaries, many teachers and aspiring teachers will seek more lucrative employment elsewhere.

There are two approaches to comparing teachers' salaries with those of other professional staff. The first is to estimate actual salaries and make direct comparisons. In 1985, for example, the agrege (best qualified secondary teacher) in France earned F4,200 less per month than senior staff in other occupations; but a certified teacher (secondary teacher with standard qualifications) earned F20,000 more a year than mid-level staff from the private sector.

The interpretation of these figures is complicated by the inclusion of overtime payments and family supplements for those teachers who have children; both kinds of payments are subject to variation. Furthermore, over the five-year period examined in table 5-1, the average age of secondary teachers increased, and since teachers' salaries are tied to seniority, the 1985 figures reflect this, otherwise there would have been a salary reduction.

Table 5-1. Growth in Teachers' Salaries as Compared with Other Professional Staff
(annual salary in current French francs)

Position	*1976*	*1980*	*1982*	*1984*	*1985*
Agreges[a]	-	108,000	137,500	160,000	166,500
Certified[b]	55,800	83,800	107,800	124,800	130,900
AE/PEGC[c]	-	73,500	92,000	104,800	107,700
Teachers[d]	38,900	58,500	72,800	95,176	89,800
Higher staff, private and semiprivate	99,300	136,300	-	206,500	217,300
Average staff, private and semiprivate	48,400	70,300	-	104,200	110,300
Private and semipublic employees	29,100	44,200	-	66,900	70,600

- = not available
a. Highest grade for secondary teachers.
b. Average grade for secondary teachers.
c. Lower grade for secondary teachers.
d. Primary teachers.

Sources: Les Collections de l'INSEE Séries M (ME nages), numeros 93, 100, 113, 123; INSEE, *Tableaux de l'Economie Française (1986).*

For a broader picture, it is necessary to examine entry level salaries over a longer time frame, as in table 5-2. By way of comparison, table 5-3 shows salaries in the manufacturing industries for an overlapping, but briefer, period. This comparison shows that because the private sector significantly increased the wage scales for its lower paid workers, salaries in the manufacturing industries have grown faster than in teaching. In France, however, there has not been any "real" reductions in teachers' salaries, and, therefore, the present decrease in the teaching profession, especially the low recruitment, cannot readily be explained by financial considerations. What then of other nations?

Table 5-2. Growth of Gross Teachers' Salaries
(index, 1970 = 100)

Teacher grade stage of career	*1967*	*1969*	*1971*	*1973*	*1975*	*1977*	*1979*	*1982*	*1984*	*1985*
Agreges										
Starting	80	98	108	131	170	208	234	341	400	425
Middle	80	92	107	130	165	201	227	329	386	408
End	76	93	107	128	163	198	223	324	382	405
Certified										
Starting	76	92	108	129	170	212	238	344	403	429
Middle	80	92	107	130	168	205	231	333	390	415
End	81	93	107	129	166	200	225	328	383	407
PEGC/AE										
Starting	75	92	108	130	173	212	238	346	407	430
Middle	80	93	108	129	168	207	234	336	395	419
End	80	93	107	130	166	203	230	331	390	413
Teacher										
Starting	75	92	108	131	172	214	241	348	407	434
Middle	76	92	108	129	170	204	237	342	402	427
End	80	92	107	128	167	205	231	334	392	416
Cost of living index	85.4	95	105.5	120.2	152.8	183.2	221.3	318.6	342.2	362

Note: See table 5-1 notes for explanations of teacher grades

Source: Les Collections de l'INSEE Séries M (ME nages), números 93, 100, 113, 123; INSEE, *Tableaux de l'Economie Française (1986).*

Table 5-3. Growth of Salaries in Manufacturing Industries
(index, 1970 = 100)

	1970	*1971*	*1972*	*1973*	*1975*	*1977*	*1979*	*1980*	*1982*	*1984*
Salaries	100	112	114	141	189	244	302	341	442	494

Source: Les Collections de l'INSEE Séries M (ME nages), números 93, 100, 113, 123; INSEE, *Tableaux de l'Economie Française (1986).*

International Comparisons of Teachers' Salaries

For international comparisons to be made, the usual procedure is to convert all salaries to a common currency, generally the dollar, but because of variations in rates of exchange, this procedure presents problems. An alternative is to use the buying power of salaries as the basis of comparison, and this is the procedure adopted here. In making international comparisons of teachers' average net salaries, here again there are problems because of differences among countries in their tax regulations and social contributions.

Elementary Teachers

Partial salary data (based on buying power) are available for fifteen countries, with an elementary teacher's salary varying from 1.3 to 3.0 times the GNP per capita. In this context, the most generous salaries are enjoyed by elementary teachers in Ireland, Belgium, Canada, Luxembourg, New Zealand, and Sweden, followed by Austria, Finland, Germany, Greece, Italy, the United States, and France, where the salary level of the elementary teacher is 1.5 times the GNP per capita.

It is apparent, then, that small countries, where the commitment to defense expenditure is less, are able to be more generous in rewarding their elementary teachers. It is also apparent that Anglo-Saxon countries tend to treat their elementary teachers more generously.

In many countries (Austria, Canada, Finland, Germany, Greece, Luxembourg, Norway, Portugal), the relative salary of the elementary teacher declined from 1965 to 1980. In other countries (Ireland, Italy, Sweden), the relative salary of the elementary teacher increased in the 1970s, but has subsequently declined. Finally, in still other countries (Belgium, New Zealand, Spain), there has been a steady rise in the relative salary of the elementary teacher (see table 5-4).

Table 5-4. Salaries of Elementary Teachers Compared to GNP per Capita, Selected Years and Countries

	Ratio of teachers' salaries to gross national product per capita				
Country	*1965*	*1970*	*1975*	*1980*	*1982*
Austria	-	1.64	1.45	-	1.56
Belgium	1.63	-	2.10	2.70	2.88
Canada	-	2.50	2.21	2.40	-
Finland	2.63	2.96	-	1.54	1.35
Germany	1.87	-	-	1.26	-
Greece	-	1.94	1.51	1.87	-
Ireland	2.72	-	3.23	3.03	-
Italy	-	1.62	1.95	1.74	-
Low countries	2.63	2.55	2.82	2.66	2.64
Luxembourg	-	-	3.04	2.85	2.79
New Zealand	-	-	1.39	2.13	2.10
Norway	2.45	-	-	1.78	-
Portugal	-	-	2.68	1.75	-
Spain	-	1.47	-	2.21	-
Sweden	2.88	3.16	3.07	-	-
United Kingdom	-	-	-	1.87	-

- = not available

Source: UNESCO statistical yearbooks (various years)

Secondary Teachers

In many countries, secondary teachers' salaries have decreased on the basis of GNP per capita, but this does not necessarily signify a reduction in buying power, because of the impact on GNP per capita of increases to the lower salary scales of other job occupations (see table 5-5).

Table 5-5. National Salaries of Secondary Teachers Compared to GNP Per Capita

Country	*1965*	*1970*	*1975*	*1980*	*1982*
Austria	-	1.87	1.88	1.74	2.00
Canada	-	2.50	2.31	2.40	-
Finland	1.67	2.20	-	1.56	1.40
Germany	2.45	-	2.75	-	-
Greece	-	2.54	1.85	2.00	-
Ireland	2.00	-	2.30	2.65	-
Italy	-	1.47	1.62	1.58	-
New Zealand	-	-	-	-	2.95
Norway	1.77	-	-	-	-
Portugal	-	-	2.34	-	-
Turkey	-	-	-	-	2.35
United Kingdom	-	-	-	2.26	3.37
Yugoslavia	3.91	4.09	-	-	-

- = not available
Source: UNESCO statistical yearbooks (various years)

As previously mentioned, however, salaries by themselves cannot necessarily account for teacher shortages. Other factors also need to be considered.

Influences of Nonsalary Factors on Teachers

In France, the age at which teachers begin to teach has increased. Thus, elementary teachers now have to wait four years after their baccalaureate before they receive a teacher's salary. Formerly, potential secondary teachers could be recruited immediately after the baccalaureate; now they have to wait until the end of teacher training. In short, the financial rewards for teaching have been postponed. At the same time, at the other end of the teacher's career, the retirement age has been extended from 55 to 60. This taking away of years at the beginning and adding them at the end is generally regarded as negative.

What might superficially appear attractive about teaching is the work week. In OECD countries elementary teachers spend only about 16.5 to 28.0 hours per week (average 22 hours) and secondary teachers 12 to 35 hours per week (average 19.5 hours) in front of their classes. Again, the figures do not reveal the whole picture because other factors such as preparation and grading time also need to be considered. Preparation time (including researching, documentation, and keeping abreast of new techniques) and evaluation (correcting homework and exam papers and keeping school records) involve elementary teachers in an average of 13 hours a week and secondary teachers slightly more, depending on experience, professional commitment, and local or national expectations.

Other tasks include staff meetings, conferences, administrative tasks, supervision, and various extramural activities determined by the initiative and interests of the teacher. Some nations have introduced standards for the time spent on nonteaching tasks of this kind: 20 hours

per month in Italy, 4 hours per week in Sweden, 6 to 12 hours per week in Israel, and 8.3 hours per week in the United Kingdom. Some U.S. studies indicate that teachers spend up to 40 percent of their working hours in nonteaching functions. A general average internationally, however, seems to be 7 to 9 hours per week.

Adding up classroom time, preparation and marking time, and time spent on various administrative tasks, we arrive at an overall figure of about 41.5 hours per week for the elementary teacher and 40.5 hours per week for the secondary teacher. In France, however, these figures are more like 48 hours per week and in the United States 50 hours per week. Thus, the teacher's work week exceeds the 40 hours per week advocated by the International Labour Organization. Thus, the teacher's work week does not differ significantly from the week of the active population. Furthermore, whereas teachers have seen their working hours increase, most professional staff have seen their working hours diminish. Of course, by way of compensation teachers do enjoy a shorter working year: 180 to 210 days per year compared with 235 to 250 days per year in most other professions.

Turning now to the status of teachers, we shall see a parallel decline. Throughout the 19th century and most of the 20th, the teacher ranked high on the social hierarchy in the community. The broadening of education and the growth of the middle class, however, have meant that the teacher is no longer so revered.

As for the psychological satisfaction of teaching and awakening young minds to knowledge, ever since the rebellions of the 1960s, the respect of the young for the authority of their elders has diminished, making the teacher's situation a good deal more stressful. At the same time, television, computers, trips, travel, and the rapid growth of knowledge in an information society have contributed to the teacher's uneasiness about his or her own subject mastery. On the positive side, the relative security of a career in teaching, more free time, and often being able to work at home, still apply; but they have particular appeal to women with school-age children.

A final consideration that bears on teaching as a career is the student/teacher ratio. Large classes and overcrowded classrooms result in a stressful environment, increase the work load, and make it more difficult for the teacher to establish any kind of rapport with individual students or their parents. In France there has been significant improvement in this area. At the elementary level, the student/teacher ratio was 30:1 in 1960, 24:1 in 1975, and less than 22:1 in 1984-85. At the secondary level, the student/teacher ratio was: 31:1 in 1960, 26.4:1 in 1976, and 24:1 in 1984-85. By comparison, in the United States the average (both elementary and secondary) was 22.5:1 in 1970, 18.5:1 in 1983, and 17.9:1 in 1985.[1]

Conclusion

One of the chief concerns of this paper has been to determine some of the main reasons why people choose (or do not choose) a career in teaching, and so to explain why there is currently a teacher shortage in France. There were two broad areas that were considered: teachers' salaries and other aspects of the teaching profession unrelated to salary.

Our analysis suggested that teachers' salaries in France have pretty well kept pace with those in other professions, and although there has been some drop relative to GNP per capita (due to increased wages for lower paid jobs), the buying power of teachers' salaries has not been noticeably eroded. What has changed is a longer time at the outset before a person can qualify for a teacher's salary and a later retirement age, both of which are negatively regarded.

To attract more people into the teaching profession, a substantial increase in salary could be effective; but even if salaries increased, there is no guarantee that teachers would then be

1. Statistics for France from Ministère de l'Education, de la Jeunesse et des Sports, 1988, 1972. Repères et *Référence Statistiques sur les Enseignements et la Formation*. Statistics for U.S. from U.S. Department of Education, Office of Educational Research and Improvement, 1987, 1985, 1972. *Digest of Education Statistics*.

willing to increase their work load (even with more pay) insofar as many of them chose the profession because of the working conditions.

The problem of potential or actual shortage of teachers is not peculiar to France. It is also acute in other countries such as the United States or the United Kingdom, but it must also be noted that where the salaries of teachers relative to other professions are higher, as in Japan or Germany, the threat of shortages appears to be less immediate.

6

SOCIAL AND ECONOMIC ASPECTS OF TEACHING IN THE UNITED STATES

Alan P. Wagner

New Pressures in U.S. Elementary and Secondary Education

Over the 1980s, a series of national reports described widespread concerns about inadequate levels of student learning in elementary and secondary education.[1] The motivation for these reports can be summarized as follows: improvements in student knowledge and competencies must be achieved if today's youth are to qualify for good jobs, if firms are to compete in an increasingly international marketplace, and if the nation's economic and military security is to be preserved. The reports acknowledged the need to increase the resources devoted to education and to improve the quality of schooling in general, and of teachers in particular. Unfortunately, the calls for educational reform have emerged at a time when there is a growing imbalance between the demand for well-trained and motivated teachers and the resources—financial and human—available to increase the supply.[2]

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1. The "first wave" of reform reports included National Commission on Excellence in Education, *A Nation at Risk*, October 1983; Mortimer J. Adler, *The Paideia Proposal: An Educational Manifesto*, 1982; Education Commission of the States, *Action for Excellence: Task Force on Education for Economic Growth*, June 1983; Twentieth Century Fund, *Making the Grade: Report of the Twentieth Century Task Force on Federal Elementary and Secondary Education Policy*, 1983; John A. Goodlad, *A Place Called School: Prospects for the Future*, 1984; Theodore Sizer, *Horace's Compromise: The Dilemma of the American High School*, 1984; The College Board, *Academic Preparation for College: What Students Need to Know and to be Able to Do*, 1983; Ernest Boyer, *High School: A Report on Secondary Education in America*, 1983; Business/Higher Education Forum, *America's Competitive Challenge: The Need for a National Response*, 1983.
The so-called "second wave" reform reports included Carnegie Forum on Education and the Economy, Task Force on Teaching as a Profession, *A Nation Prepared: Teachers for the 21st Century*, 1986; National Governors' Association, *Time for Results: The Governors' 1991 Report on Education*, 1986; California Commission on the Teaching Profession, *Who Will Teach Our Children? A Strategy for Improving California's Schools*, 1985; American Federation of Teachers, Task Force on the Future of Education, *The Revolution is Overdue: Looking Toward the Future of Teaching and Learning*, 1986; Committee for Economic Development, *Investing in Our Children: Business and the Public Schools*, 1986.

2. While more able, better trained, and highly motivated teachers surely contribute more to student learning than teachers lacking these attributes, the extant research yields conflicting findings on what teacher characteristics, when combined with other school- and home-based resources, lead to better student learning. See Hanushek (1986, 1981), Kemmerer and Wagner (1985b), Saks (1984), Thomas and Kemmerer (1983), Murnane, Maynard, and Ohls (1981), Leibowitz (1977), and Levin (1970).

Recommendations from National Reports

A Nation at Risk (the 1983 report of the National Commission on Excellence in Education) heralded the "first wave" of national reports on the quality of education in the United States. The reports characterized education (particularly at the secondary level) as undemanding, inappropriate, and unappealing for both students and teachers. These conditions, the reports argued, were associated with poor student learning (as measured by performance on standardized tests). A number of "sticks" and "carrots" for students and teachers were proposed: greater curricular rigor, more time in school, more frequent assessments of students and evaluations of teachers, and increases in salary scales, particularly performance-based salary scales (Kemmerer 1986; Kemmerer and Wagner 1985a).

An inventory of the recommendations is presented in figure 6-1. While they nominally address the identified problems, some of the recommendations could work at cross purposes. For example, innovative and creative individuals attracted to teaching by pay incentives might view mandated curriculum guides and narrowly drawn student and teacher evaluation criteria as disincentives. To date, states and schools have adopted more "sticks" than "carrots".[3]

Figure 6-1. First Wave Educational Reform Recommendations

Those affecting teachers	Those affecting students
Sanctions, regulations, and controls	
Increase testing of teachers and students	Increase graduation requirements
Increase rigor or review for certification and tenure	Increase college admission requirements
Increase teacher pre-service requirements	Require common syllabuses
Raise admission requirements in teacher education programs	Increase testing
Extend pre-service education	Increase school day or year
Increase teacher in-service requirements	Ensure more student discipline (less freedom)
Increase professional development activities	
Incentives	
Increase teacher pay	Create specialized schools and enrichment programs
Increase performance incentives	Stimulate parental involvement
Introduce career ladder options	Recognize excellence
Increase support for training	Reduce class size
Recognize excellence	Ensure more student discipline (order)
Reduce class size	
Ensure more student discipline (order)	

Source: Adapted from Kemmerer and Wagner (1985a).

With the objectives of educational reform generally accepted, a "second wave" of reports offered specific recommendations for achieving the desired outcomes. These reports, including the Carnegie Forum's *A Nation Prepared* (1986) and the National Governor Association's *Time for Results* (1986), took as their starting points two apparent barriers to educational improvements. First, it appeared that the growing demand for new teachers was not being met

3. Indeed, few recommendations for direct incentives for students appear in the reports, and virtually none of the recommendations for student incentives have been widely embraced by states or school districts (Kemmerer and Wagner 1985a).

from the traditional source of new teacher graduates, and thus the reports devoted considerable attention to ways of ensuring adequate supplies of able, qualified teachers. Second, in probing more deeply into how changes might improve schooling, the panels recognized the contradiction in seeking to attract able, talented individuals to teach in an environment that failed to promote initiative, creativity, and learning.

To address these concerns, the panels offered a set of recommendations (listed in figure 6-2) that are both more detailed and more innovative than those proposed in the earlier reports. In particular, they provided specific suggestions on how to attract, retain, and motivate teachers, on how to ensure that teachers obtain adequate pre-service education and training, and on how teachers and schools might best be evaluated. All these suggestions extend earlier recommendations, but the panels go still further in recommending more flexibility at the school site, greater involvement and autonomy for teachers, differentiated teacher staffing, and (limited) choice for parents. The reports emphasize greater use of incentives leading to increased autonomy and less use of mandates. One favorable side benefit of differentiated staffing is reduced demand for qualified, permanent teachers, since a small number of experienced teachers would supervise a greater number of teacher apprentices.

Figure 6-2. Second Wave Educational Reform Recommendations

Those directly affecting teachers	Those indirectly affecting teachers
Sanctions, regulations, and controls	
Establish a National Standards Board for certification	Monitor school performance
Upgrade teacher education programs	
Increase in-service requirements	
Increase teacher evaluation	
Incentives	
Establish career ladder or differentiated staffing schemes	Increase school autonomy
Increase teacher involvement in decision-making	Improve school environment
Increase teacher autonomy	
Provide time for planning and consultation with peers	
Increase salaries	
Increase other economic incentives	
• Mobility of benefits	
• National certification standard	

Source: Adapted from Kemmerer and Wagner (1985a).

Demographic and Social Trends

The national reports were released at a time when a shortage of talented, qualified teachers had become evident in a number of states. The projections in table 6-1 show the demand for teachers is expected to outpace the supply of new teacher graduates by 710,000 between 1988 and 1992. The principal source of demand is teacher turnover. Over one million new teachers are

required to replace current teachers who retire, seek employment in other occupations, or temporarily withdraw from the labor force. Historically, about 6 percent leave the profession each year; but as the pool of current teachers continues to age (see below) and more attractive job opportunities open up, the rate of turnover is expected to increase.[4] A second source of demand for new teachers is enrollment growth: after nearly ten years of decline, school enrollments are projected to increase by 5 percent up to 1992.

Where will the new teachers come from? According to the projections, new teachers will account for a smaller share of the hires, less than half perhaps of the 1,223,000 openings. This reverses a pattern of surplus at the beginning of the 1980s, when new teacher graduates outnumbered vacancies by an estimated 125,000.

Table 6-1. Demand for and Supply of Teachers, 1978-92

	Demand for additional teachers (thousands)				*Teacher supply (thousands)*	
		Attributable to changes in:				
Year/sector	*Total demand*	*Student enrollment*	*Teacher/pupil ratio*	*Teacher turnover*	*New graduates*	*Excess(+)/ shortage(-)*
1978-82						
Public	553	-214	115	653		
Private	94	-4	16	82		
Total	647	-218	131	735	772	+125
1983-87						
Public	899	-33	74	858		
Private	132	-1	11	122		
Total	1,031	-34	85	980	640	-391
1988-92[a]						
Public	1,061	89	59	913		
Private	162	13	13	136		
Total	1,223	102	72	1,049	513	-710

a. The 1988-92 figures are projections based on the following principal assumptions: (a) population increases follow the middle series projections and age-specific enrollment rates remain unchanged; (b) teacher/pupil ratios continue to increase following their historic trend; (c) teacher attrition averages 8 percent per year; (d) the supply of bachelor's graduates newly qualified to teach continues to decline as a share of all college graduates.

Source: Gerald (1985).

The decline in the number of new teacher graduates parallels a longer-term slide in the number of college students planning to enter teaching. According to annual surveys of college freshmen, the proportion planning to enter teaching fell from nearly 20 percent in the early 1970s to less than 5 percent in 1982. As the demand for teachers grows, a continuation of the

4. During the 1983-84 school year, new teachers accounted for 7.9 percent of all teachers (U.S. Department of Education, 1986b, table 3.4). In 1987, the estimated rate of attrition from teaching was 4.1 percent (Ferstritzer 1990). The projections shown in table 6-1 are based on an 8 percent turnover rate.

declines in the number of new teacher graduates makes it more difficult to fill vacancies at current salary scales and levels of noneconomic rewards. With recent improvements in the extrinsic and intrinsic rewards for teachers, however, the supply of those trained and willing to teach appears to be increasing. The evidence is sketchy, but at least suggestive. Thus:

- By 1990, the proportion of freshmen with teaching as their intended occupation rose to over 9 percent, up from a 1982 low of 4.7 percent (Higher Education Research Institute 1991). Colleges are reporting substantial increases in applications for programs leading to teacher certification. At the University of Rochester, for example, the number of seniors seeking teaching credentials increased 43 percent in a single year.
- Former teachers have returned to teaching in greater numbers. By 1985-86, for example, former teachers in Connecticut accounted for 58 percent of new hires, up from 55 percent in 1983-84 (Nelson, Gould, and Silverwood 1986; Prowda 1985).
- Age-specific retention rates have not fallen dramatically. While teacher turnover has increased with the aging of the pool of teachers, rates of attrition among teachers aged 50 and below have edged up only slightly (Grissmer and Kirby 1986).
- Graduates without teaching experience have been attracted to the profession. From 1985 to 1987, New Jersey placed 242 individuals with provisional qualifications obtained through its alternate route for certification into math and science teaching positions (Department of Education and Science 1989). In 1986, one-third of New York City's new teachers came from other professions.

The larger problem may well be maldistribution—both geographically and across specialities—of the available supply. With respect to geography, rates of growth in school enrollment are projected to vary widely by city, state, and region. Schools in most major cities are expected to experience enrollment increases substantially higher than the 5 percent estimated for the nation as a whole. Enrollments in sunbelt states and California, fueled principally by increases in minority enrollments, are also expected to grow more rapidly (Hodgkinson 1985). In these areas, the pool of those qualified and willing to teach at current levels of compensation may well fall short of the overall demand. Evidence of shortage also appears in several subject areas. For example, positions in the biological and physical sciences and in mathematics are more likely to go unfilled (U.S. Department of Education 1991, 1986a, 1985).

Table 6-2. Characteristics of Public School Teachers, 1990

Teacher characteristic	*Current teachers*	*New teachers hired since 1985*	
		New teacher graduates	*Former teachers*
Teaching experience (mean years)	14.5	3.1	10.1
Age (mean years)	42	30	40
Education (percentage with master's and above)	60	26	53
Gender (percentage of women)	71	73	84
Racial/ethnic group (percentage minority)	8	6	5
Marital status (percentage married)	75	65	81
Annual household income (median in US$)	50,262	39,374	54,332
Average annual salary (US$)	28,500	23,110	24,110

Source: Feistritzer (1990).

What are the characteristics of current, new, and former teachers? As shown in table 6-2, the current pool is predominantly female (71 percent in 1990) and are older (average age 42), more experienced (average teaching experience of 14.5 years), and better educated (60 percent have education at least through the master's degree) than in previous years. About 8 percent come from racial/ethnic minority backgrounds. By 1990, teachers were receiving salaries averaging $28,500 per year.

New teachers differ from former teachers in several respects. Former teachers returning to the classroom account for perhaps two-thirds of all new hires.[5] As shown in table 6.2, returning teachers brought an estimated ten years of teaching experience, were forty years old (on average), and most were female. The remaining third of new hires are those with no teaching experience, most of whom are new teacher graduates. While new graduates are certainly inexperienced, they are not young (average age 30). About 73 percent are female and 6 percent come from racial/ethnic minority backgrounds. In 1990, within their first five years of employment, new teacher graduates received salaries averaging slightly more than US$23,110. Sixteen percent of 1983-84 new teacher graduates reported average college grades of mostly "A," about the same proportion as math majors. (For business, social science, and biology majors, the corresponding shares reporting mostly "A" grades were 8, 11, and 12 percent respectively.)[6]

Less can be said about the pools of those who might be attracted into teaching. Connecticut has nearly 45,000 individuals with Connecticut certification who are not currently teaching. Of these, about one-eighth are at least 50 years old, and an unknown percentage have left the profession with no intention of returning. Conservatively, perhaps as many as 15,000 Connecticut residents with qualifications might return to teaching if they were provided with appropriate opportunities and incentives. To be able to put the numbers in perspective, the reader should know that Connecticut employs close to 40,000 teachers.[7]

Social and Economic Aspects of Teaching

Why do young college graduates enter teaching? Why do teachers in mid-career choose to remain in teaching? Why do previously qualified graduates enter teaching at a later age? Why do mid-career professionals in other occupations move into teaching? These choices involve decisions about labor force participation and occupational preference that are influenced by the social and economic aspects of teaching relative to other occupations.

The Framework

The decision to enter and to remain in teaching is part of a wider set of life-cycle choices that include the frequency and/or timing of education and training, labor force participation, migration, marriage, and having children. These choices directly affect the value placed on the social and economic aspects of teaching. Although much of the economic research on occupational choice has focused on the role of financial incentives, research from a variety of disciplines (including economics) stresses the importance of nonmonetary aspects on entry into

5. The estimates refer to Connecticut. Teachers moving in from other states are assumed to account for 40 percent of the newly certified hires (and so represent no net gain nationally). When these "current" teachers are subtracted from the total number of new hires, new teacher graduates account for slightly less than a quarter, newly certified former graduates account for about 5 percent, and former teachers with qualifications account for about two-thirds of "new" teachers (see Prowda 1985).

6. Other comparisons do indicate that those choosing education as a major score below the average on college admissions examinations (see, for example, Darling-Hammond 1984) and that those leaving teaching are apparently the most able (see, for example, Schlecty and Vance 1984). With respect to the former, it is important to keep in mind that education majors account for only 60 percent of those newly qualified to teach. The balance are graduates receiving degrees in other subject areas (mathematics, English, biology, and so forth) who acquire teaching credentials (U.S. Department of Education 1986b).

7. While Connecticut appears to have a relatively large reserve pool of teachers, other states may not be as fortunate. This is another dimension of the geographic maldistribution problem discussed earlier.

and movements among occupations (Research Foundation of SUNY 1985; Chapman 1983b, 1983a; Chapman and Hutcheson 1982; Freeman 1976, 1971; Lortie 1975).

For the purposes of this review, prior investigations of influences on labor force participation and occupational choice lead to the following propositions: social as well as economic aspects of teaching have value; social and economic aspects may take on either positive (benefit) or negative (disincentive) values; and the absolute amounts of, as well as the values placed on, current social and economic benefits and disincentives differ among groups of current and prospective teachers. This last aspect is particularly important because social and economic factors highly valued by today's teachers may not fully reflect the types of benefits desired by future teachers.

A number of studies have developed inventories of the kinds of social and economic aspects that current and prospective teachers consider important (Bacharach, Bauer, and Shedd 1986; Fogarty 1986b, 1986a; Darling-Hammond 1985; Cresap, McCormack, and Paget 1984). Social aspects, defined as those attributes of teaching that have no direct monetary value, include working conditions, workload, job responsibilities, school and community resources, and social recognition and status. Economic aspects include salary and fringe benefit packages, job security, prospects for job mobility, and the length of the work day and year.

Social Aspects of Teaching—Working Conditions

> Conventional wisdom says that adequate salaries, more in line with those of persons with comparable education, are the answer . . . Certainly this writer's frequent conversations with teachers bring to the question "What would make teaching a better life for you?" the same response: "A decent salary!" However, when the conversation is taken a step further, to the question "With a better salary, would you be happy in teaching?" the response is often a hesitation, followed by "No, because . . . " leading to a discussion of the many factors that make teaching so grindingly debilitating (Fogarty 1986a, p. 4).

WORKLOAD. Generally, the more teachers are required to do, the less attractive the profession for both current and prospective teachers. Some of the more important indicators of workload include: class size and student/teacher ratio; amount of preparation; time set aside for preparation and grading; volume of nonteaching assignments; and support from aides and volunteers. Evidence on these indicators is sketchy and contradictory. National data imply that average class size has fallen steadily during the last twenty years, from twenty-four to nineteen students at the elementary level and from twenty to fifteen students at the secondary level (U.S. Department of Education 1989, table 56). Contradicting this favorable finding are several indications of increased assignments. As students' family structures and backgrounds change, teachers have to spend more time handling behavioral problems associated with these changes.[8] In a recent survey commissioned by the National Education Association (NEA), a quarter of teachers reported constant problems in finding time for planning or for grading (table 6.3). About 12 percent complained about a lack of support from teacher aides. Another study found that teachers spend from 10 percent to 40 percent of their in-school work time on activities not directly related to instruction (Dembowski, Kemmerer, and Wagner 1986). These activities partly explain why teachers spend an average of fifty hours per week, at school and at home, on school-related work (U.S. Department of Education 1986c).

JOB RESPONSIBILITIES. Those who seek to make teaching a more attractive profession propose the following recommendations: give teachers more authority over curricula, resource allocation, hiring, and evaluation decisions; free teachers from responsibilities not related to instruction; provide opportunities for exchanges with peers; and put teachers in charge of their

8. In 1982-83, one-quarter of elementary and secondary students came from single parent families. Of all families with students, about 34 percent had incomes below $15,000 and 25 percent were racial/ethnic minorities (U.S. Department of Education 1984).

own classrooms, not only to select the methods of instruction, but also to limit unnecessary interruptions. Despite recent reforms, teachers seldom assume this level of responsibility and control.

Table 6.3. Perceived Adequacy of Time, Support, and Resources

Perceived adequacy factor	*Percentage of teachers who:*	
	Constantly experience problems	*Often experience problems*
Time		
Amount of time for:		
Grading	27	28
Planning	23	25
Support		
Assistance from:		
Staff specialists	6	13
Teacher aides	12	10
Resources		
Amount of space for:		
Storage	20	19
Activities	16	20
Classroom	13	16
Quality of space for:		
Storage	16	18
Activities	12	18
Classroom	4	11
Amount of:		
Classroom supplies	5	12
Textbooks	4	7
Workbooks	7	9
Money for supplies	15	21

Note: Based on 1,789 responses to a randomly selected survey of 2,530 elementary and secondary teachers affiliated with the National Educational Association.

Source: Bacharach, Bauer, and Shedd (1986, pp. 95-96).

When asked about decisionmaking, about half of the teachers in the NEA survey believed they should be more involved in decisions about what to teach, which textbooks to use, and how to teach (Bacharach, Bauer, and Shedd 1985, p. 97). Slightly less than three-quarters of all teachers believed they should be more involved in budgeting and allocation decisions, while two-thirds felt teachers should assume greater responsibility in staff hiring and evaluation. Less than 10 percent believed teachers should be less involved in any of these decisions.[9]

Further, as mentioned above, teachers currently spend up to 40 percent of their time in activities not directly related to instruction, ranging from collecting milk money to supervising the lunchroom or the halls. The teachers surveyed believed the responsibility for these activities could be shifted to paraprofessional support staff. Finally, while teachers have

9. Teachers and principals interviewed in a small number of school districts by Dembowski, Kemmerer, and Wagner (1986) generally did not believe teachers should become more involved in staff hiring and evaluation activities, although the finding did not apply in all districts.

opportunities to talk with colleagues during the school day, surveys reveal that very little of this time was explicitly given over to exchanges on instructional content and delivery. Together, these results imply that the autonomy, authority, and involvement of teachers in decisionmaking is far more limited than educational reformers would like.

RESOURCES. Favorable working conditions demand sufficient space and adequate supplies in a physically attractive, comfortable, and safe environment. The condition and type of space in schools probably detract more from teaching than does lack of space or supplies. With the aging of many schools, teachers are increasingly being asked to work in poorly equipped, unattractive, sometimes unsafe buildings. A recent study commissioned by the Utica (New York) City School District recommended that four schools should be closed, in part because of their poor condition.[10] Similar problems are being encountered in many school districts. With respect to adequacy of space, teachers in the NEA survey apparently experienced only modest problems: about one-fifth reported that a lack of storage space presented constant difficulties. Smaller numbers criticized the amount and quality of space for activities and classrooms (table 6.3). A more important shortage is the amount of space set aside for teacher offices or small conference rooms where teachers may meet individually with students and/or parents, work on class materials, or grade papers. Very few schools provide space for this purpose.[11] Some teachers also encounter modest difficulty in securing supplies and materials in sufficient quantities.

IMPORTANCE OF WORKING CONDITIONS. Do current and potential teachers view poor working conditions as a disincentive to entering and remaining in teaching? Research and survey data suggest the answer is "yes." Teachers reporting heavier workloads and/or experiencing shortages of space and material resources appear to be more dissatisfied with teaching and less committed. The same pattern holds for those desiring greater involvement in decisionmaking. Further, 36 percent of former teachers who left the profession for another job cited working conditions as one of the main reasons they left (Metropolitan Life Insurance Company 1986a). Of current teachers most likely to leave, more identified paperwork (18 percent) and nonteaching duties (12 percent) as the working conditions that they were least able to tolerate. Among all current teachers, 72 percent believed that reducing rules and regulations would "help a lot" in retaining good teachers (second only to better pay). To attract good teachers, 72 percent suggested that the time teachers spend in nonteaching duties should be reduced (Metropolitan Life Insurance Company 1986b).

Teachers also respond to a more favorable, professional work climate. While teachers in private schools receive, on average, 20 percent lower salaries than their colleagues in public schools, they feel more influential over decisions about curricula, text selection, course content, teaching techniques, and hiring and firing (Chubb and Moe 1986). Private school teachers apparently find working relationships with fellow teachers more collegial and are more satisfied with their jobs than public school teachers. As Chubb and Moe (1986) summarize:

> Private school teachers are trading economic compensation and formal job security for superior working conditions, professional autonomy, and personal fulfillment. Public school teachers are doing precisely the opposite (p. 41).

Social Aspects of Teaching—Social Conditions

To what extent is education ranked high among public priorities, and to what extent are teachers held in high regard? While schools have long been considered important and influential institutions, public support for schools and teachers has fluctuated. During the 1970s

10 Perhaps the most compelling indication of the poor physical condition of some of Utica's schools occurred as the study commenced: the roof of a building caved in one week before the beginning of the school year.

11. School buildings lack teacher office and meeting space largely because state programs for capital projects typically do not reimburse school districts for the costs of constructing this space.

and early 1980s, a general decline in student scores on standardized tests, poor employment prospects for high school and college graduates, mounting pressures on taxpayers to finance all public services, and changes in the expectations of schools led to a deterioration of public support. By 1983, the public's evaluation of schools and education had fallen to a low point. As shown in table 6.4, only 31 percent rated the performance of schools as "A" or "B." By 1990, however, the proportion rating school performance as "A" or "B" had increased to over 40 percent.

Table 6-4. Public Attitudes toward Schools and Teachers, 1976-90

Public opinion	*1976*	*1981*	*1983*	*1985*	*1988*	*1990*
Average grade for local public schools:						
A and B	42	36	31	43	40	41
C	28	34	32	30	34	34
D and fail	16	20	20	14	14	17
Don't know						
Willingness to pay higher taxes for improved local public schools:						
Yes	-	-	58	-	64	-
No	-	-	33	-	29	-
Don't know	-	-	9	-	7	-
Teacher salaries are:						
Too high	-	10	8	6	-	5
About right	-	41	31	43	-	31
Too low	-	29	35	33	-	50
No opinion	-	20	26	18	-	14

- = not available
Source: Elam (1990)

Beyond these general assessments, the best indication of support for education and of respect for teachers is the willingness of the public to finance the operation. As shown in table 6.4, public opinion polls show a willingness to increase taxes in support of school reform. The proportion in accord with this alternative rose from 58 to 64 percent between 1983 and 1988. This support has been backed by actual spending. From 1983–84 to 1988–89, spending per pupil increased by 8 percent per year, a rate clearly above the 4 percent average increase in prices and about equal to the rate of growth of the gross national product (U.S. Department of Education 1989, tables 33, 34, 145). The public has also backed increases in teacher salaries. Average teacher salaries increased some 8 percent per year in real terms from 1981 to 1985, and 6 percent per year from 1985 to 1989 (Nelson 1990). In 1990, 50 percent of the public believed teacher salaries were too low, while 6 percent believed them to be too high.

Do teachers choose to enter and remain in teaching when public support for education and public respect for teachers is high? According to teachers, it does make a difference. About one-fifth of former teachers who left for other jobs reported that a lack of respect (17 percent) and a lack of parental or community support (18 percent) prompted them to leave (table 6-5). Current teachers identified as most likely to leave listed these reasons even more frequently. Since public support directly leads to financial support, however, it is hard to know whether the stature of the profession independently encourages individuals to enter or remain in teaching.

Table 6.5. What Makes Teachers Leave?

Primary reasons	*Survey respondents (percent)*		
	Former teachers recently leaving for other work	*Current teachers who have seriously considered leaving*	*Current teachers who are likely leavers*[a]
School related			
Overcrowding, class size	5	8	9
Workload	1	4	3
Inadequate time for planning	1	1	1
Paperwork	6	12	18
Nonteaching duties	11	12	12
Long hours	4	5	5
Lack of input, independence	14	5	5
School physical environment	2	8	7
Lack of supplies, materials	3	3	5
All other	3	21	22
Total (respondents giving at least one reason)	36	41	65
Personal			
Routine	13	13	13
Stress	4	8	7
Burnout	8	4	6
Total (respondents giving at least one reason)	27	22	22
Professional			
Lack of respect	17	25	27
Lack of parental or community support	16	21	22
Inadequate, low salary	60	62	65
No chance of advancement	15	5	7
Better benefits elsewhere	4	1	1

a. Likely leavers are defined here as current teachers who have seriously considered leaving in the past and who say they are likely to leave within the next five years.

Source: Metropolitan Life Insurance Company (1986a).

Economic Aspects of Teaching—Salary

> Many individuals whose abilities and preferences make several options feasible will alter their plans when relative wages change, moving—all else the same—from careers with contracting markets to those with expanding markets. (Freeman 1976, p. 56)

The most publicized policy solutions for making the profession more attractive for current and prospective teachers involve salary improvements. Rates of pay (and, to a lesser extent, fringe benefits) remain one of the few conditions of employment that can be immediately and directly affected through state and local policies. While average pay is the most obvious indicator of salary conditions, criteria for allocating pay by years of service, performance, recruiting needs, and job responsibilities and/or subject areas serve to differentiate pay among groups of current or prospective teachers.

LEVEL. In 1989-90, teacher salaries averaged US$31,315.[12] The latest figure extends what appear to be rather substantial salary improvements since 1981. As shown in table 6-6, average teacher salaries slipped from US$30,391 to US$25,579 in constant dollars over the 1970s; a drop of some 18 percent. This is about three times the decline in real earnings for all workers. Teacher pay in real terms has now regained the 1971-72 level.

Table 6.6. Salaries of Public School Teachers, 1971-86, Selected Years
(average annual salary)

Group	*1971-71*	*1981-82*	*1985-86*	*1989-90*
All teachers				
Current dollars	9,705	18,945	25,260	31,315
1990 dollars	30,391	25,579	30,123	31,315
All workers				
1990 dollars	26,666	24,933	26,159	-
Beginning teachers				
Current dollars	6,970	13,539	17,667	21,770
1986 dollars	21,611	18,280	21,068	21,770
Estimated salary advantage for graduates entering occupations other than teaching), 1990 dollars[a]				
Business	4,955	5,942	4,361	4,762
Liberal arts	4,211	4,703	4,047	4,474
Chemistry	8,899	10,818	7,868	7,318
Mathematics and statistics	7,150	9,927	7,524	7,174
Engineering	11,280	15,647	12,933	10,534
Accounting	10,499	7,205	4,233	5,038
Sales, marketing	5,997	6,120	3,603	6,058
Economics and finance	7,038	6,784	5,506	4,942
Computer science	-	11,515	10,143	7,330

- = not available

a. Absolute dollar difference between beginning teacher salary and starting salary in indicated field, in 1990 dollars.

Source: Nelson (1990, tables II-1 and III-2); Massell (1985).

These figures are misleading, however, for two reasons. First, some of the increase in pay during the 1980s may be attributed to increases in teacher experience and education rather than improvements in salaries at all levels. According to Nelson, Gould, and Silverman (1986),

12. The averages mask wide differences in pay by state and school district. In 1989-90, teachers in Alaska received an estimated average of US$43,097, while South Dakota's teachers recorded an average US$21,300 in pay (Nelson 1990). Teachers in rural areas earn up to 40 percent less than teachers in urban schools (Reed and Busby 1985). Boothroyd (1985) reports substantial differences in beginning and top salaries among school districts within a relatively small, 93-school district in upstate New York. According to his analysis, entry level salaries ranged from US$16,378 to US$11,500; a 42 percent spread. At the top of district pay schedules, the highest "top" salary was 67 percent above the lowest "top" salary.

teachers at the median level of experience in 1985-86 earned, in constant dollars, about 15 percent less than a similarly experienced teacher would have earned in 1976-77. At entry, however, real rates of pay have improved from US$18,280 to US$21,770 since 1981 (an increase of 19 percent). Second, teacher salaries continue to lag behind those of all college graduates—an important comparison group—by more than 20 percent. But since teacher contracts typically apply for nine or ten months, the average teacher's daily rate of pay comes very close to the daily salary of all college graduates.[13]

Do current and prospective teachers place great value on salaries when making career choices? The accumulated evidence suggests they do. While current teachers frequently list pay as one of the less important reasons why they became teachers, more current and former teachers cite inadequate pay as a major reason why they may leave (or have left) the profession. In 1985, 65 percent of current teachers who were "likely leavers" listed inadequate, low salary as a main reason for considering resignation (table 6.5). Some 60 percent of former teachers who left for another job claim they did so because of low pay in teaching. In comparing their current jobs with teaching, almost four-fifths of these former teachers reported salaries to be better in their new occupation (table 6.7). When current teachers were asked for

Table 6-7. Perceptions of the Social and Economic Aspects of Teaching of Former Teachers who Left Teaching for Another Job, 1985

	Percentage of former teachers		
Aspect of teaching	*Better in teaching*	*Better in other occupation*	*Same or not sure*
Social aspects			
Working conditions			
Hours worked each week	38	42	20
Caliber of colleagues	31	42	27
Control over won work	15	75	10
Intellectual challenge	26	56	17
Personal satisfaction	25	58	16
Equipment at job	8	75	18
Social conditions			
Professional prestige	13	75	13
Economic aspects			
Salary	14	79	7
Fringe benefits			
Retirement benefits	39	49	12
Health insurance benefits	40	40	20
Job security	49	35	17
Work year			
Vacation benefits	59	35	7

Source: Metropolitan Life Insurance Company (1986a).

13. According to Feistritzer (1986), the comparable daily salary figures for college graduates and teachers are US$136 and US$129, respectively. To the extent hours worked per day differ, these comparisons may mislead. As noted previously, teachers spend more than 50 hours per week on school-related work. College graduates to which teachers would be compared (those in the professions) also typically work more than a standard 40-hour work week.

recommendations on how to attract or retain good teachers, 79 percent felt that "compensation comparable to other professions" would be attractive to good teachers, while 94 percent felt that "providing a decent salary" would retain good teachers (Metropolitan Life Insurance Company 1986b). The salary options were listed by more responding teachers than any other alternative.

Increased interest in teaching as a career by college students and recent graduates has been linked to improvements in pay. Manski (1984) has undertaken the only recent econometric study of the wage elasticity of supply for teachers, controlling for ability. His results are provocative. Young college students appear to be highly sensitive to salaries when choosing between teaching and other occupations (an estimated wage elasticity of supply for teachers between two and three). Taking student ability into account, Manski estimates that the average ability of new teachers could be raised to the average of all college graduates if the equivalent of a minimum SAT total score of 800 were required for teacher certification and teacher salaries were raised by about 10 percent over their present levels. From a policy perspective, these estimates are crucial and highly suggestive. They imply that salary increments less than those recommended by various panels could encourage sufficient numbers of capable students to pursue teaching as a career.

LIFE CYCLE. The rate at which salary increases with experience certainly affects the overall attractiveness of the profession for those entering teaching. As important, however, pay increments based on seniority influence the decisions of current teachers to remain in the profession. The salary-seniority profile in teaching appears to be flat. According to Barro and Lee (1986), teachers with bachelor's degrees can expect salaries to increase by 65 percent after 20 years, at which point pay levels off.[14] This growth is less than the 79 percent increase expected by male college students, but a bit closer to the 68 percent increase expected by female college students (McMahon and Wagner 1981). Together, these data suggest that by mid-career, teachers may have smaller salary incentives for remaining in the profession.

MERIT PAY. Performance-based pay options range from the establishment of performance steps on salary schedules to special targeted pay incentives and bonuses. In the past, teacher pay and compensation arrangements provided few such incentives. By 1985-86, however, thirty states had implemented some type of performance incentive (Fogarty 1986b). While interest in various incentive approaches is high, teachers have yet to be greatly affected by them. The state programs provide benefits to only a small portion of teachers. Fewer than 20 percent of all school districts have incentive plans. According to a Department of Education survey, 8.2 percent of public school districts had added steps on salary schedules, while 4.5 percent offered cash bonuses (U.S. Department of Education 1986a, table 3.14).

Do such pay plans improve the attractiveness of the profession for current or prospective teachers? Since experience with performance-based incentives in education has been quite limited, very little is known about how they might be valued by teachers. Indeed, much of the current discussion of performance-based incentives (or merit pay) involves designing a program that teachers will perceive as fair (see, for example, Broyles and Vrchota 1986; Fogarty 1986b; Barro 1985; Inman 1985; Cresap, McCormack, and Paget 1984). When teachers have been polled directly about performance-based incentives, 29 percent supported the concept of merit pay, while 13 percent believed it would "help a lot" in attracting good teachers (Metropolitan Life Insurance Company 1986a, 1986b).

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14. Barro and Lee (1986) also examine the salary-seniority relationships in Japan and the United States. Japanese teachers start at roughly 75 percent of the beginning salary for U.S. teachers. After 20 years, the difference disappears. At 30 years of experience, Japanese teachers receive 25 percent higher salaries than U.S. teachers (see also, OECD 1990). Interestingly enough, comparisons of the salary-seniority relationship for business executives show that U.S. executives start at lower rates of pay, experience more rapid growth in pay, and earn higher salaries after considerable experience than do European executives.

DIFFERENTIATED PAY. Differentiated pay refers to salary increments intended to attract or retain teachers with specific competencies or responsibilities. The career ladder whereby teachers are assigned to positions that carry different levels of responsibility (and pay) is probably the most widely publicized differentiated pay plan now under discussion. Teachers with qualifications in certain subjects (for example, mathematics, science, foreign languages) and in geographically underserved areas have also been targeted for extra pay. Cancellation provisions in student loan programs and overload assignments in some subjects are other examples of differentiated pay.

As with performance-based pay schemes, differentiated pay has had limited application in education. While twenty-five states explored the possibilities of implementing career ladder plans on a wide scale, there is little accumulated experience with these job/pay strategies in either the public or private sectors (Cresap, McCormack, and Paget 1984). Teachers appear to be evenly split on their acceptance of the concept, with 49 percent in favor of career ladders and 46 percent opposed to the idea (Metropolitan Life Insurance Company 1986b). About a third (34 percent) of current teachers believe that a career ladder job/pay plan would help attract good teachers.

Whether other forms of differential pay can make teaching more attractive for targeted groups of current and prospective teachers remains unknown. Teachers in disciplines with shortages (for example, mathematics teachers in New York City) have long been afforded the opportunity to teach an "extra" class for extra pay. Experience with forgiveness provisions in student loan programs suggests that students planning to become teachers often give up financial aid from other sources in order to obtain the greatest starting salary advantages. As indicated in table 6-6, 1989-90 chemistry and math graduates entering careers other than teaching received US$7,318 and US$7,174 more, respectively, than they would have earned teaching. For liberal arts graduates, the starting salary difference was US$4,474. By implication, improvements in pay for those with qualifications in science or math would attract more of them into teaching, and so would reduce the shortages. An interesting point is that the constant dollar salary advantage for graduates entering occupations other than teaching has declined since 1981–82 (compare, for example, an advantage of US$5,942 for 1981–82 business graduates to a US$4,726 advantage in 1989–90). This relative improvement in beginning teacher salaries has coincided with an increase in interest in teaching as a career, as described above.

Economic Aspects of Teaching—Fringe Benefits

Other economic aspects of teaching that supplement wages generally include health insurance and retirement benefits, paid leave for illness and training, and reimbursements for tuition. As recently as the 1960s, these benefits represented a relatively small share of employee compensation. Over the past two decades, however, employer expenditures on voluntary supplements has more than doubled.

LEVEL. Although the value of the package varies across states and within districts, fringe benefits provided voluntarily by school districts probably account for 15 to 20 percent of the total compensation provided to workers.[15] Of districts surveyed by the Educational Research Service, virtually all provide health and retirement benefits (table 6.8). Another survey of school districts found that 40 percent offer support for professional development, 4.3 percent cover association dues, and 21.9 percent provide opportunities for earning additional income (Peat Marwick 1986).

Are current and prospective teachers influenced by fringe benefits when making career decisions? In polls, teachers generally give high ratings to the fringe benefits provided by schools. As shown in table 6.5, less than 5 percent of former teachers who left for other work listed better benefits as a reason, and about 40 percent believed retirement and health insurance

15. Since all employers are required to contribute to make payments on behalf of teachers into Social Security and worker's compensation, contributions to these programs are not included in the fringe benefit sum.

Table 6-8. Fringe Benefits Offered to Teachers

Benefits	*Percentage of school districts providing them*
Health insurance	
Group hospitalization	96.6
Medical/surgical coverage	94.8
Major medical insurance	95.9
Dental insurance	65.4
Prescription drug insurance	58.3
Vision care insurance	25.6
Life insurance and retirement	
Group life insurance	94.8
Contribution to state retirement system	96.7
Tax sheltered annuity	76.2
Other benefits	
Liability insurance	67.5
Professional development	37.2
Association dues and fees	4.3
Opportunities for outside income	21.9

Source: Education Research Service, Inc., as reported by Fogarty (1986b); Peat Marwick (1986).

benefits were better in teaching than in their new occupation (table 6.7). At least in this respect, teaching appears to measure up well against benefits provided by other occupations. The extent to which teachers actually respond to the level of fringe benefits is not known.

Economic Aspects of Teaching—Job Factors

Other aspects of teaching have economic value to those entering, remaining in, or considering leaving the profession. These job factors include job security, mobility, job sharing, and the length of the workday or work year.

JOB SECURITY. Job security (via tenure) provides important economic benefits for teachers. About half of all teachers who have left the profession for other work acknowledge this. As shown in table 6-7, however, some 35 percent felt their new job provided greater security. The extent to which prospective teachers value and respond to different levels of job security is not known, but in an economy that affords considerable security to all professional workers, the additional job security provided in teaching is not likely to be great (Wagner and Lynton 1986).

MOBILITY. Each year up to 40 percent of all teachers who resign from their current positions secure employment with another school district. This can be partly explained by the characteristics of teachers: almost 75 percent of all teachers are female or married. Some are likely to be "second" wage earners who value teaching because it offers possibilities for employment everywhere.

Teachers who move, however, often suffer a loss in pay because hiring districts do not give full credit for years of teaching experience. Since the granting of full credit will increase the potential salary for teachers who move from one district to another, individual school district officials have viewed changes in this procedure as one way to attract teachers. Some districts have already introduced more liberal transfer rights: for example, the Los Angeles Unified

School District grants newly hired experienced teachers credit for up to 10 years of teaching experience in their salary schedule.

Mobility into and out of the profession, as well as among districts and states, has been enhanced or retarded by credit granted for certain fringe benefits, most particularly accumulated pension rights. Restrictions on portability of retirement programs penalize those who leave one district for employment elsewhere. Now, some states and districts compensate the loss of such benefits by experienced teachers who have moved to take up new posts. Although some districts provide attendance incentives, the value of accumulated sick days usually cannot be recovered.

JOB SHARING. People with other family and work responsibilities might be attracted into teaching if the profession afforded greater opportunities for part-time employment. For example, in 1983-84, part-timers accounted for less than 5 percent of all employed teachers in Connecticut (Prowda 1985). While greater provision for part-time employment would not affect the attractiveness of the profession for current teachers, such a change could permit districts to tap into a large pool of able, talented, potential teachers.

WORK DAY, WORK YEAR. A unique feature of teaching is the short work year. Contracts cover a nine- to ten-month period, leaving the summer months open for securing additional income or engaging in professional development activities. About a quarter of teachers worked during the summer in the early 1980s, some in the schools and some outside teaching.

Not surprisingly, current and former teachers find the short work year attractive. Of former teachers who left for employment in other occupations, 59 percent rated "vacation benefits" in teaching higher than those provided in their new jobs (table 6-7). Among all teachers, 79 percent prefer a nine- to ten-month contract to a twelve-month contract at higher pay (Feistritzer 1986). Interestingly enough, compared to the mid-1960s, teachers today appear more likely to value a shorter work year. In 1984, Dade County teachers responded to the same questions asked of teachers in the district in 1964. The only "reward" that current teachers found more satisfying than their 1964 counterparts was "the schedule (particularly the summer)" (Kottcamp, Provenzo, and Cohn 1986).

Would twelve-month contracts make the profession more attractive for prospective teachers? Teachers apparently think not. Barely a third believe that a longer working year (at higher pay) would "help a lot" to attract good teachers (Metropolitan Life Insurance Company 1986b). However, those not currently attracted to the profession may attach greater value to a longer work year than do teachers on the job.

Conclusion

While much is known about the conditions under which teachers work, far less is known about the effects of these conditions on teacher supply and teacher effectiveness. The information provided in this chapter offers, at best, somewhat tentative and incomplete indications of the size of these effects. In this respect, the discussion fairly reflects what is known. Additional research, therefore, should be undertaken in several related areas.

First, how will prospective teachers respond to changes in the social and economic aspects of teaching? Relatively little is known about how those not now teaching value specific social and economic aspects of teaching. What proportion would prefer 12-month contracts to the current shorter work year? What proportion would respond to increased involvement in decisionmaking? What proportion would respond to increases in pay and fringe benefits? On this last question, the wage elasticity of supply estimates of Manski (1984) are quite suggestive. It may be that modest improvements in teacher pay (and perhaps in other social and economic aspects as well) would be sufficient to encourage large numbers of new college graduates, former teachers, and mid-career professionals in other fields to enter teaching and to reduce the apparent shortage of teachers.

Second, how will changes in the mix of working conditions, status, pay, fringe benefits, and job factors in teaching affect the career decisions of current teachers? Teachers apparently do respond to differences in the composition of these variables when they choose where to teach and whether to remain in teaching; however, available research data do not indicate the size of these responses. Schools could be paying a price higher than necessary to retain capable teachers, or, conversely, to encourage less able teachers to leave for other careers.

Third, will changes in the social and economic aspects of teaching encourage teachers to become more motivated? To the extent that the capacities of current teachers are not being fully used, economic and social inducements might be used to encourage greater effort (see, for example, Becker 1977; Richards 1985). Although this topic has not been fully addressed, it should receive attention for two reasons. Through the mid-1990s, current teachers will continue to carry most of the teaching load. Therefore, the development of strategies to improve the motivation and effectiveness of the cadre of current teachers would appear to be both prudent and important. Moreover, those conditions of teaching most likely to affect decisions to enter and remain in teaching may differ from the conditions that affect the effort teachers give to the job. The differences may be substantial, particularly when current and potential teachers are compared.

The practical questions involved in implementing change in the level and mix of social and economic benefits and disincentives are likely to be considerable. Nonetheless, a better understanding of how changes, if implemented, would affect the numbers and characteristics of those wishing to enter and remain in teaching, the effort they devote to teaching, as well as the costs of generating each change would appear to be essential for informed decisionmaking. Armed with this information, education authorities would be able to make better choices about the most effective ways to attract, retain, and motivate able teachers.

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7

A Comparison of Teachers' Salaries in Japan and the United States

Stephen M. Barro and Joe W. Lee

Concerns about the quality of schooling in the United States have made U.S. education policymakers increasingly willing to learn from other countries' experiences. In particular, Japan's economic and technological successes have generated great interest in how that country runs its educational system. Of special current relevance, given ongoing U.S. efforts to raise the quality of teaching and, especially, to reform teacher compensation systems, are the questions of how Japan pays its teachers and how the economic status of Japanese teachers compares with that of teachers in the United States. This report, a comparative analysis of the salaries of Japanese and American public school teachers, addresses these issues.

The data for the Japanese side of these comparisons were obtained from the Japanese Ministry of Education, Science, and Culture (Mombusho), and the National Institute of Educational Research in Tokyo. The main sources include education statistics compiled and published by the Ministry of Education, Science, and Culture; survey results published by the Ministry of Home Affairs, the Ministry of Labor, and the Statistics Bureau of the Management and Coordination Agency; and some special unpublished tabulations made available by Japanese education officials.

The U.S. data are in some ways more problematic than the Japanese, mainly because the U.S. system is so decentralized. Data on average salaries of U.S. teachers are produced by both the National Education Association and the American Federation of Teachers, but no one produces information on salary structures or schedules that can be compared with similar information for Japan. Consequently, we have had to construct an average, or typical, teacher salary schedule ourselves, using such data as could readily be assembled from existing sources. That this schedule is based on limited and perhaps not fully representative data is a significant limitation of the analysis. We also make use, at various points in the analysis, of non-salary data from the National Center for Education Statistics (NCES) and earnings data from the Bureau of Labor Statistics. In addition, we have obtained certain data on both the United States and Japan from publications of international agencies, notably the International Labor Office and the Organisation for Economic Co-operation and Development.

We are grateful for the assistance of Shogo Ichikawa, Director of Research Department II of the National Institute for Educational Research in Tokyo, who provided much of the Japanese data on which our analysis is based and offered detailed comments on an earlier draft of this report; to Akio Nakajima, Director of the Policy Division, Japan Ministry of Education, Science, and Culture, and members of his staff, who supplied and helped us interpret statistical data on Japanese teachers and their salaries; to Robert Summers, University of Pennsylvania, for providing and interpreting purchasing power parity exchange rates; and to Jewell Gould, American Federation of Teachers, for supplying salary data for U.S. school districts. We also received helpful comments and advice from William K. Cummings, U.S. National Science Foundation; Ken Shimahara, Rutgers University; and Larry Suter, National Center for Education Statistics.

Teaching Conditions

The main finding of this report was that the average salaries of Japanese and U.S. teachers were nearly equal in purchasing power during the most recent year for which data are available, 1983-84. Specifically, we estimate that the average salary of a Japanese teacher in that year, converted into "equivalent dollars" according to a purchasing power parity (PPP) exchange rate, was US$20,775, as compared with a U.S. average of $21,476 during the same period. This equivalency, however, needs to be assessed in light of such teaching conditions as the salary structures in Japan and the United States, the longer work year in Japan, the greater average seniority of Japanese teachers, and the higher academic qualifications of teachers in the United States.

The Structure of Salaries in Japan

The Japanese National Personnel Authority has established a national teachers' salary structure, which although it is directly applicable only to national schools, provides the model on which the salary structures of local public schools throughout the country are based. The main characteristics of Japan's national teacher salary structure can be summarized as follows:

- There is one set of salary schedules for teachers in elementary and lower secondary schools and another for teachers in upper secondary schools.
- The salary schedules relate a teacher's basic salary primarily to his or her seniority. Salary continues to increase with seniority for up to thirty-nine years, that is, up to retirement.
- Teachers are rewarded for earning academic degrees by being advanced a specified number of steps along the salary scale (for example, three steps for a master's degree). Thus, both seniority and highest degree earned affect one's position on the salary ladder.
- A distinction is made between teachers and assistant teachers, and the latter are paid according to separate lower salary scales; however, less than 1 percent of the teaching force falls into the assistant category.
- A teacher's total salary is made up of his or her basic salary, as specified in the applicable schedule, plus a large "bonus" (paid semi-annually) equal to nearly five months' base salary, plus an array of special allowances based on personal need factors and teaching assignments.

The basic starting salary of a new teacher with a bachelor's degree is Y119,600 yen a month regardless of the level. Later in their careers, however (beginning at twenty years of service), upper secondary teachers are paid slightly more than elementary or lower secondary teachers with the same experience and degrees. For example, after thirty years of service, the difference in pay between upper secondary school teachers and elementary or lower secondary school teachers with a bachelor's degree is 2.6 percent. The difference in pay between a teacher with a master's degree and one with a bachelor's degree is approximately 17 percent initially, but this difference diminishes with seniority, both relatively and absolutely, and amounts to only about 3 percent at the end of the teaching career. Similarly, the pay differential at the elementary or lower secondary levels between teachers with four-year and two-year college degrees is about 16 percent initially, but this too eventually declines to a differential of only about 3 percent.

Table 7.1 presents the formulas and/or amounts used to calculate the bonus and the various allowances. The bonus alone adds nearly five months pay, or almost 41 percent, to the basic scheduled salary, and the allowances add another 23 to 25 percent depending on the level of education, making the total annual salary equal, on average, to 164 percent of base pay for elementary and lower secondary teachers or to 166 percent of base pay for upper secondary teachers. Naturally, we use total salary figures, not just base salaries, to represent Japan in

salary comparisons with the United States. For specific total salary figures for Japanese teachers see table 7-2.

Table 7-1. Bonuses and Allowances Added to Scheduled Base Salaries of Japanese Teachers, 1983-85
(yen)

Kind of allowance	*Recipient*	*Formula*
Bonus	All teachers	Yearly amount = 4.9 x (base salary + temporary area allowance) + 3.8 x (family allowance)
Family allowance	Teachers with dependents	Monthly amount = 13,200 for spouse + 3,500 for each of next two dependents. Teacher without spouse = 8,900 for first dependent, 1,000 for others.
Child allowance	Teachers with three or more children	Monthly amount = 5,000 for each of third and subsequent children
Temporary area allowance	Teachers in areas where living costs are relatively high	3, 6, or 7 percent of base salary + family allowance, depending on area
Traffic allowance	Commuters	Monthly amount up to 21,700
Isolated area allowance	Teachers serving in isolated areas	Monthly amount = between 4 and 25 percent of salary + family allowance, depending on area
Allowance for compulsory and other education school teachers	All teachers	Monthly amount = 6 percent of base salary, up to 20,300
Cold area allowance	Teachers serving in cold areas	Monthly amount = variable (a lump sum amount + a percentage of base salary + family allowance)
Housing allowance	Teachers paying more than 9,000 monthly rent or owning their own homes	Monthly amount up to 14,700.
Multigrade class allowance	Teachers in charge of multi-grade classes	Daily amount = 230 for 2-grade classes, 280 for 3-grade classes
Special service allowance	Paid for special services	Daily amount = 500 to 1,700
Allowance for coordination and advice	Designated head teachers	Daily amount = 700
Day and night service allowance	Teachers engaged in day and night watch duty	Daily amount = 1,600 to 3,600
Infant care allowance	Female teachers who take infant care leave	Monthly amount = 10.92 percent of base salary
Vocational educational allowance	Upper secondary teachers of vocational education	Monthly amount = 6 or 10 percent of base salary
Part-time and correspondence education allowance	Teachers in part-time and correspondence upper secondary schools	Monthly amount = 8 or 10 percent of base salary

Source: Ministry of Education, Science, and Culture (1982). Amounts modified according to unpublished data provided by the Policy Division, Ministry of Education, Science, and Culture.

Table 7-2. Salary as a Function of Degree Level and Seniority, Japan and the United States, 1983-84

Years of service	United States, all teaching levels (US$)		Japan (thousands of yen)				Japan (U.S. dollar equivalent)[a]			
			Elementary, lower secondary		Upper secondary		Elementary, lower secondary		Upper secondary	
	B.A.	M.A.	B.A.	M.A.	B.A.	M.A.	B.A.	M.A.	B.A.	M.A.
1	13,764	14,782	2,350	2,757	2,384	2,797	10,399	12,199	10,549	12,374
5	16,367	17,897	2,893	3,296	2,934	3,343	12,799	14,582	12,983	14,791
10	20,172	21,988	3,563	4,013	3,614	4,070	15,764	17,756	15,991	18,010
15	[b]	[b]	4,329	4,789	4,391	4,858	19,156	21,190	19,430	21,494
20	22,725	25,914	5,094	5,516	5,171	5,635	22,538	24,407	22,879	24,934
25	22,725	25,914	5,776	6,121	5,928	6,335	25,555	27,086	26,231	28,030
30	22,725	25,914	6,330	6,589	6,588	6,883	28,007	29,155	29,150	30,455
35	22,725	25,914	6,735	7,065	7,046	7,483	29,799	31,259	31,179	33,110
37	22,725	25,914	6,974	7,196	7,345	7,742	30,859	31,842	32,502	34,257

a. There is more than one way to define the dollar equivalent of a Japanese salary expressed in yen, but we choose to define it in terms of the teacher's purchasing power, or ability to consume. The dollar equivalent of a given yen salary, by this definition, is the number of dollars that would be required in the United States to attain a level of consumption equivalent to that obtained by the salary earner in Japan. There are two major reasons why currency conversions based on ordinary commercial, or market, exchange rates do not yield proper estimates of these consumption equivalencies. One is that market exchange rates reflect directly only the relative prices of goods traded internationally, which do not include many important items (for example, housing) in the market basket of the typical teacher or consumer. The other is that market rates are strongly affected by factors other than the relative purchasing power of the respective national currencies, such as interest rates, stability of financial conditions, and economic expectations in each country. Consequently, we require, instead of market rates, conversion factors that reflect the relative consumption purchasing power of the two national currencies, that is, the ratio of the cost of a given consumption standard in yen to the cost of the same consumption standard in dollars. Fortunately, such conversion factors have been developed. They are known as purchasing power parity (PPP) exchange rates to distinguish them from the more familiar market rates.

b. U.S. salary values are uncertain at the fifteen-year level of experience because we lack detailed data on when individual district salary schedules "top out."

In the United States

It is something of a misnomer to speak of a teacher salary structure for the United States, since there are neither nationally prescribed nor state-prescribed structures, but only the salary systems of thousands of local school districts. Nevertheless, the national uniformity is sufficient to indicate that there is generally a standard method of paying American teachers. Any quantitative description, however, can pertain only to average pay levels and typical pay scales, around which there are large local variations. To illustrate the extent of this variation, statewide averages of teachers' salaries in 1983-84 ranged from US$15,812 in Mississippi to US$27,807 in the District of Columbia (excluding Alaska's noncomparable figure of US$37,807). Moreover, this does not reflect the immense variation among districts within states, not only in average salary, but also in the shapes and parameters of the salary schedule. Consequently, the only way to compare U.S. salary structures with those of Japan (or any other country) seems to be to construct a typical salary schedule for the United States. We have done so, but we used a far from ideal set of data.

The characteristics that typify U.S. local salary structures are as follows:

- A single salary schedule covers teachers at all levels from elementary through high school.
- A teacher's scheduled salary is a function of experience and training. The typical local salary schedule takes the form of a matrix in which the columns reflect units of post-baccalaureate education completed and/or higher degrees earned (for example, B.A. only, B.A. + 30 units, M.A. only, M.A. + 30 units, and so forth) and the rows correspond to years of service. Experience increments, however, are usually paid only for the first ten to fifteen years of service, after which the salary schedule levels off.
- In general, no distinctions of rank among teachers and no ratings of merit or performance are reflected in teacher salary schedules, although such features do figure in the salary structures of a small percentage of U.S. school districts. Given the current movement in the United States toward implementing teacher incentive plans, however, merit pay and other performance-based pay arrangements are likely to become more common in the future.
- Payments in addition to scheduled salaries are generally minor and are limited, in most cases, to compensation for specific extra services, such as coaching athletic teams and supervising other student activities. Extra pay may also be offered to teachers of vocational education and teachers assigned to "difficult" schools. There are virtually no explicit extra payments based on personal need factors, such as family size, extent of commuting, or cost of housing. One might argue, however, that U.S. counterparts of some of the geographically based (as opposed to individual need-based) allowances in the Japanese salary structure (notably, the temporary area, isolated area, cold area, and housing allowances) take the form of pay differentials among local school districts with different economic and environmental conditions, that is, market-based pay differentials in the United States substitute, to a degree, for administratively established differentials in Japan.

Table 7.2 displays our estimates of salaries paid to teachers with selected combinations of education and experience under a typical U.S. teacher salary schedule in 1983-84. They were developed in the following manner:

- First, we obtained from the American Federation of Teachers (AFT) salary schedules for a sample of seventy-eight local school districts.
- Second, from this sample we calculated the average salaries associated with the selected combinations of teacher education and experience shown in the table.
- Third, we adjusted for the difference in average salary levels between districts in the AFT sample (which tend to be large, urban, and northeastern) and districts in the nation as a whole by multiplying each figure computed in the previous step by the ratio of the national average to the sample average teachers' salary.

Consequently, the level of the synthesized salary schedule reflects the U.S. salary average, while the shape of the schedule (that is, the ratios among salaries corresponding to different education and experience levels) reflects the typical pattern of relative salaries in the AFT sample districts. For example, the salary shown for a teacher with an M.A. degree and ten years of experience in table 7.2 is 1.6 times the salary shown for a starting teacher because that is the average ratio in our sample districts.

There are several potential sources of error in this estimation procedure. The major problems have to do with the nonrepresentativeness of the AFT sample and the procedure for calibrating the schedule to the national average salary level. While we are aware of the limitations of the estimates, they are the best we could construct with the available data, and so we have used them, misgivings notwithstanding, as the basis for our comparison of Japanese and U.S. salary structures.

Other Conditions of Teaching

The validity of any intergroup salary comparison, whether within a country or between countries, depends on the similarity of the workers and jobs being compared. Other things being equal, differences in qualifications, duties, and working conditions will be reflected in differences in pay; hence, such differences should be taken into account when salaries are compared. Ideally, they should be considered quantitatively. That is, it would be desirable, in comparing teachers' salaries in Japan and the United States, to adjust the salary figures for differences in nonsalary factors and then to compare adjusted salaries. While some factors can be handled easily, however (for example, salaries can be prorated for differing lengths of the work year), others are difficult to deal with, even in principle. How, for example, should one adjust salaries for differences in student discipline between the countries? In light of the conceptual problems and data deficiencies, we have generally not attempted quantitative adjustments.

Teacher Qualifications

Japanese teachers have substantially less post-secondary schooling, on average, than American teachers. In the past, one could obtain a license to teach at the elementary and lower secondary levels in Japan after completing only two years of higher education, and one could be hired as an assistant teacher with only the equivalent of a high school diploma. Although virtually all recent entrants into teaching have four-year college degrees, there are still significant numbers of older teachers in the system who have had two years or less of college-level training. In 1983-84, for example, approximately 41 percent of elementary school teachers, 24 percent of lower secondary teachers, and 11 percent of upper secondary teachers had not earned bachelor's degrees. Moreover, in the same year, 56 percent of U.S. high school teachers, 47 percent of middle school and junior high teachers, and 45 percent of elementary teachers held at least a master's degree, whereas the corresponding percentages in Japan in 1983-84 were only 4.9 percent, 1.1 percent, and 0.3 percent, respectively. Consequently, a comparison of average teacher salaries between the two countries, unadjusted for the difference in average educational attainment, would understate the level of pay in Japan relative to the level of pay for teachers with the same educational attainment in the United States.

However, the average number of years of experience per teacher is higher in Japan than in the United States. In 1983-84, the average teacher in Japanese elementary and lower secondary schools had 16.8 years of service, and the average upper secondary school teacher had 17.5 years. We do not have U.S. data for 1983-84, but the average experience reported by the National Education Association (NEA) for all U.S. teachers in 1980-81 was thirteen years. Perhaps a more striking comparison, in light of the favorable treatment of senior teachers under Japanese salary schedules, is that in 1980-81 over 40 percent of Japanese teachers had been teaching for twenty years or more, as compared with 21.9 percent in the United States. This was offset only fractionally by the greater percentage of young, recently hired teachers (less than five years of experience) in Japan: approximately 20 percent, as compared with 13.5 percent in the United States. Because of the difference in average experience, a comparison of unadjusted average salaries overstates the level of pay in Japan.

Gender Composition of the Teaching Force

Although teacher salary schedules are sex neutral in both Japan and the United States, it does not follow that the average salaries of male and female teachers are equal. In the United States male teachers are paid more than female teachers, on average, because (a) male teachers tend to be more experienced and to have completed more post-baccalaureate training, and (b) males tend to receive more supplemental pay for activities such as coaching. We do not have data on salaries of male and female teachers in Japan, but it is not unlikely that the

pattern is similar. Consequently, the gender composition of the teaching force should be taken into account in comparing average salaries between the countries.

A larger percentage of the teaching force is male in Japan than in the United States: 59 percent in Japan (1982-83) versus 32 percent in the U.S. (1983-84). Broken down by level, 16.5 percent of U.S. elementary teachers and 50.3 percent of U.S. secondary teachers were male in 1983-84, while in Japan, 40.0 percent of elementary teachers, 67.1 percent of lower secondary teachers, and 83.5 percent of upper secondary teachers were male in 1982-83. Assuming that the average male teacher's salary is higher than the average female teacher's salary in both countries, this difference in gender composition would tend to inflate the average salary figure in Japan relative to that in the United States.

Days and Hours Worked

One of the more clear-cut differences in conditions between the two countries is that the Japanese teacher's work year is longer. School is in session in Japan for up to 240 days per year, counting half days on Saturdays, as compared with 180 days, on average, in the United States. Moreover, Japanese teachers, as full-year employees, can be assigned duties even when students are not in school and have nothing akin to the American teacher's three-month summer vacation. A comparison of annual salaries, therefore, overstates substantially the ratio of salary per day worked of an average teacher in Japan to salary per day worked of an average teacher in the United States.

We do not have fully comparable data on hours of work in the two countries. On the one hand, Japanese teachers are apparently directly engaged in classroom instruction for fewer hours per week than American teachers, especially at the secondary level. According to one set of estimates, the average number of direct teaching hours per teacher per week in Japan in 1980 was 22.6 at the elementary and lower secondary levels and only 15.2 at the upper secondary level. By comparison, U.S. high school teachers reported an average of 26 hours of direct teaching per week in NEA's 1980-81 teacher survey. On the other hand, the official work week is longer in Japan: 44 hours as compared with the NEA's estimate of 36.5 in the United States. This is consistent with information that Japanese teachers perform many non-teaching functions not required of teachers in the United States (see below). A further complication is that we do not know how the number of "unofficial" or "uncompensated" hours put in by teachers in Japan compares with the average of 8.7 such hours per week reported for U.S. teachers in the same NEA survey. Thus, although it is clear that Japanese teachers work more weeks per year than American teachers, we cannot say whether this is offset or reinforced by a difference in hours per week.

In connection with time worked, we also note that Japanese teachers have much less opportunity than American teachers to supplement their salaries with outside earnings. The constraints of the Japanese school calendar are reinforced, in this regard, by social restrictions on acceptable types of outside employment for teachers (the main acceptable form of such employment is private tutoring). Some data on the outside earnings of U.S. teachers are reported in an NEA (1982) report, but we have no information on the presumably smaller outside earnings of Japanese teachers against which these might be compared.

Responsibilities and Availability of Support Staff

Although scope of responsibility is difficult to quantify, it seems clear that teachers in Japan are responsible for a wider range of functions than teachers in the United States. The difference is related in large part, though not entirely, to the absence from Japanese schools of many of the types of support personnel found in the U.S. schools. For example, there are no professional counselors in upper secondary schools in Japan; teachers perform the counseling function themselves. Similarly, Japanese teachers assume most of the responsibilities borne by curriculum coordinators, attendance officers, and teaching aides in the United States. They also

perform clerical functions that would usually be handled by nonteaching personnel in American schools, and they spend considerably more time than American teachers in meeting with individual parents. Further, they have roles with no U.S. counterparts, such as participating, together with their students, in maintaining and cleaning the schools. We do not know, however, whether or to what extent these extra responsibilities translate into extra hours of work.

Student-Teacher Ratios and Class Sizes

Student-teacher ratios are higher and classes are larger in Japan than in the United States. In 1982-83, for example, the student-teacher ratios in locally controlled public schools in Japan were 27.9 at the elementary level, 22.6 at the lower secondary level, and 18.1 at the upper secondary level. By comparison, the student-teacher ratios in the U.S. public schools in the same year were 20.4 at the elementary level and 16.6 at the secondary level. The average elementary class in local public schools in Japan contained 33.6 students in 1982, while the average lower secondary class contained 37.9. The average class size in upper secondary schools was not reported, but the number of students per class was limited by law to 45. By contrast, U.S. class sizes, averaged twenty-five at the elementary level and twenty-three at the secondary level during the 1980-81 school year.

Assuming that larger classes are harder to teach, one might argue that a comparison of average salaries understates salaries in Japan, relative to the magnitude of the teaching job. But observers of the Japanese scene seem to agree that it is much easier to maintain discipline and classroom control in Japan than in the United States, notwithstanding that Japanese classes are larger. While some burdens of teaching undoubtedly do increase with class size (for example, the burdens of dealing with students' individual problems and grading students' work), we cannot judge whether teaching a large Japanese class is, on balance, a more difficult job than teaching a smaller class in the United States.

Nonsalary Compensation

Salary is the largest single element, but not the only element, of teacher compensation. Other forms of compensation include pensions, medical insurance, disability pay, survivors' benefits, and, at least in Japan, an array of social services.

Retirement benefits are the largest component of nonsalary compensation. A teacher in Japan, upon retiring at age 60, receives a lump sum payment equal to more than two years of salary plus annual pension payments ranging from 40 to 70 percent of "last salary," depending on length of service. Although we have no data on the average retirement benefits received by U.S. teachers, the provisions of the Japanese system seem generous by U.S. standards, especially taking into account the high last-salary figures on which pensions are based. Considering also that the Japanese retirement age is earlier (60 rather than 65) and that life expectancy is longer in Japan, it seems clear that retirement benefits constitute a larger supplement to salary in Japan than in the United States. On this score, a comparison of salaries alone understates the relative rewards of teaching in Japan.

In addition to retirement income, Japanese teachers receive a wide variety of fringe benefits under government subsidized mutual aid schemes. These include long-term benefits such as disability pay and survivors' annuities, short-term benefits such as medical and child care expenses and sick pay, and various welfare services. As of 1982, teachers contributed 8.87 percent of their salaries and employers contributed an additional 10.92 percent to finance these benefits.

Intangible Benefits of Teaching

Ideally, in a comparative analysis of the economic status of teachers, one would want to allow for intangible as well as tangible benefits (and costs) of teaching. One such benefit is the prestige (or lack thereof) of being a teacher. Anecdotal evidence suggests that teachers in Japan are accorded higher prestige and greater respect than teachers in the United States, but we have no statistics on the subject. If the Japanese teacher's status is indeed higher in this respect, a comparison limited to salaries would understate the rewards of teaching in Japan, relative to those in the United States.

Comparisons of Average Salaries and Recent Trends

Table 7.3 presents estimates of average teacher salaries in Japan and the United States during 1983 and 1984. In the first three rows of table 7-3, the U.S. figures are for the 1983-84 school year (September 1983 through June 1984). The Japanese salary figures show amounts received by teachers at the primary, lower secondary, and upper secondary levels from basic salaries, bonuses, and allowances. The average salary shown for all teachers combined (Y4,695,000) is a weighted average in which the number of teachers at the respective levels are the weights. Japanese yen salaries have been converted to dollar equivalents at the rate of 226 yen per dollar, which is a weighted average of the PPP rates for 1983-84, while the Japanese figures are for the Japanese school year April 1983 through March 1984. In the final row, we have adjusted for the difference in school calendars by calculating a U.S. salary average that corresponds to the Japanese school year, that is, a weighted average of U.S. average salaries for 1982-83 and 1983-84. This adjustment, we believe, yields a more valid comparison, as the resulting Japanese and U.S. salary figures apply to the same period.

Table 7-3. Comparisons of Average Teacher Salaries In Japan and the United States, 1983-84

Level	*Average salary*			*Japanese salaries as a percentage of U.S. salaries*
	United States (US$)	*Japan (thousands of yen)*	*Japan (US$ equivalent)*	
Elementary/lower secondary (Japan); elementary (U.S.)	21,452	4,577	20,254	94
Upper secondary (Japan); secondary (U.S.)	22,667	5,037	22,290	98
All levels combined	22,019	4,695	20,775	94
All levels combined, U.S. data adjusted to Japanese school year	21,476	4,695	20,775	97

Sources: U.S. salaries: NCES (1985); Japanese salaries: Ministry of Home Affairs (1985).

As mentioned previously, the principal finding from this comparison is that absolute levels of average teacher pay, measured in units of equivalent purchasing power, are nearly equal in Japan and the United States. The average dollar equivalent Japanese salary is $20,775 and the average U.S. salary is $21,476. The 3 percent difference between the two is too small to be deemed significant given the assumptions on which the estimates depend and the potential

errors these assumptions create. As per capita economic output, income, and consumption are all considerably lower in Japan than in the United States, such equality of dollar equivalent pay implies that Japanese teachers enjoy a significantly higher relative economic status (that is, relative to nonteachers in their own country) than do teachers in the United States.

Looking at trends over the five-year period 1979-80 to 1983-84, figures confirm that absolute levels of teacher pay have generally been similar in Japan and the United States in recent years. They also indicate that Japanese teachers' salaries were formerly higher in purchasing power than American salaries and have only recently declined to equal or lower levels. This decline is due to an unusually slow rate of growth in Japanese teachers' salaries during the early 1980s, specifically, an improvement in scheduled salaries of only about 5.5 percent between 1981 and 1984. Between 1979-80 and 1983-84, while the average U.S. salary rose by 38 percent, Japanese salaries increased by only 15 percent, measured in yen, or by 29 percent measured in equivalent dollars; hence the falling level of salaries in Japan relative to the United States.

The Relationship of Teacher Pay to Seniority

The rates at which salaries increase with seniority are roughly the same in the two countries during the first 10 years of teaching, but U.S. salaries top out somewhere between ten and 15 years of service, while Japanese salaries continue to increase throughout the teachers' careers. The range of salary variation in Japan from the highest end to the lowest end of the seniority scale is about 3 to 1 for teachers with bachelor's degrees (somewhat higher for upper secondary teachers than for elementary or lower secondary teachers), as compared with about 1.7 to 1 in the United States. Note that salaries rise more rapidly in the U.S. for teachers with master's than bachelor's degrees, while the opposite is true in Japan. Thus, the advantage of a master's degree diminishes with seniority in Japan, but is reinforced by seniority in the United States.

To appreciate the distributional implications of these patterns, recall that Japanese teachers are much more heavily concentrated at both ends of the seniority spectrum than are American teachers. As mentioned earlier, more than 40 percent of all Japanese teachers had at least 20 years of experience in 1981, and 20 percent had fewer than five years of experience, as compared with 22 percent and 14 percent, respectively, in the United States. The variance in teacher experience is greater in Japan. This, in combination with the greater variability of Japanese salaries with seniority, implies that there are larger seniority-based disparities in pay in Japan among teachers working in the same communities and schools than one would find in the United States. (This does not mean than Japanese pay disparities are greater on a national scale, as the larger seniority-based pay disparities in Japan may be balanced out, or more than balanced out, by the larger geographical disparities in the United States.)

Japanese salaries are below U.S. salaries during the early years of teaching, but substantially higher later in the teaching career (see table 7.2.). A Japanese elementary or lower secondary teacher with a four-year degree is paid about 76 percent as much as his or her U.S. counterpart upon entry into teaching. This ratio increases only slightly, to 78 percent, by the tenth year of teaching. At around the twentieth year, however, the pay gap disappears, and from then on, Japanese dollar equivalent salary levels are higher. (For teachers with master's degrees, the crossover point comes a few years later.) By the thirtieth year of teaching, Japanese elementary and lower secondary teachers with bachelor's degrees earn 23 percent more and Japanese upper secondary school teachers earn 28 percent more than comparable teachers in the United States, and by the thirty-seventh year, these margins grow to 36 percent and 43 percent, respectively.

Finally, we note the connection between these findings about Japanese and U.S. salary structures and the previously stated findings about relative salary levels. The near equality of average teachers' salaries in Japan and the United States does not reflect an underlying similarity of salary structures. Instead, it results from the interaction between two structural

differences: one, the difference in shapes of the respective national salary schedules, namely, that the Japanese schedule starts lower than the U.S. schedule but continues to rise after the U.S. schedule levels off; the other, the difference in the seniority distributions of Japanese and U.S. teachers. Japanese teachers, as noted earlier, are much more concentrated than U.S. teachers in the highest seniority brackets, in which Japanese dollar equivalent salaries are higher than dollar salaries in the United States. It is the interaction between this concentration and the steeper Japanese salary schedule that accounts for the equality of salary averages. If seniority distributions were the same in the two countries, the average teacher's salary in Japan would be significantly below the average salary in the United States, despite the high salaries paid to teachers with twenty or more years of service in Japan.

Comparison of Relative Teachers' Salaries

The economic status of teachers is more a matter of relative than absolute earnings. What counts is how teachers' salaries compare with pay levels in other occupations and with general levels of income and consumption in the national economy. We turn next, therefore, to comparisons of the relative positions of teachers' salaries in Japan and the United States. Because of data limitations, these comparisons are less extensive than we would have wished. For example, we were unable to obtain comparable indicators of Japanese and U.S. salaries for broad aggregate categories, such as white collar or professional occupations, and for certain professions, such as accountants or engineers. Nevertheless, the comparisons presented here do suffice, we believe, to convey an impression of teachers' relative positions on the Japanese and U.S. economic ladders.

Teachers' Salaries Relative to General Economic Activity

Comparing teachers' salaries in each country against levels of per capita gross domestic product (GDP), national income, and consumption, the results are clear-cut and striking. Japanese teachers are paid considerably more relative to all three indicators than are teachers in the United States. The average salary of a Japanese teacher is 33 percent higher relative to per capita GDP, 37 percent higher relative to per capita national income, and 48 percent higher relative to per capita consumption than the average salary of a U.S. teacher. This means that the average teacher has the power to purchase a significantly greater share of his or her country's goods and services in Japan than in the United States. (The reason that the Japanese teachers' relative advantage appears greater when salaries are compared against consumption than when they are compared against GDP or national income is that the saving rate is much higher in Japan than in the United States, leaving a smaller fraction of GDP or income for consumption in Japan.)

The Japanese teacher's advantage is smaller, however, than a few years ago. The ratio of average salary to per capita GDP was 33 percent higher in Japan than in the United States in 1983, but was 48 percent higher in 1979; the Japanese ratio of average salary to national income exceeded the U.S. ratio by 37 percent in 1983, as compared with 53 percent in 1979; and the Japanese ratio of average salary to consumption, which was 48 percent greater than the U.S. ratio in 1983, had been 61 percent greater in 1979.

This fractional diminution of the Japanese advantage mainly reflects the low rate of improvement in Japanese teachers' salaries during the last few years, specifically, the salary freeze in 1982 and the low rates of increase in scheduled salaries in 1983 and 1984. The ratios of U.S. teachers' salaries to per capita output, income, and consumption have risen slightly over the period, while the Japanese ratios have fallen. Thus, the relative economic status of the Japanese teacher, though superior to that of the U.S. teacher, has been declining, while the relative status of U.S. teachers has been maintained and, since 1981, has begun to improve.

In terms of years of service, the relative economic status of Japanese teachers is only slightly superior to that of U.S. teachers at the outset and only moderately higher after ten

years. By the twentieth year, however, the relative position of the Japanese teacher is 36 percent to 52 percent higher than that of the U.S. teacher, depending on which indicator one selects; and by the thirty-fifth year, the Japanese teacher's advantage is in the range of 80 percent to 100 percent. Based on the latter difference, it seems fair to say that senior teachers in Japan have access to a relative standard of living not attainable by equally senior teachers in the United States.

The foregoing comparisons have properties that make them potentially misleading, and it is important to use and interpret them with caution. One limitation is that the figures do not take into account teachers' income from sources other than their teaching salaries. The omission of outside earnings tends to exaggerate the relative economic status of teachers in Japan, as Japanese teachers have fewer opportunities than U.S. teachers to supplement their salaries with earnings from summer employment and second jobs.

A second limitation is that the comparisons pertain only to the relative earnings of teachers themselves and not to the relative economic positions of teachers' households. The effects of this limitation are unclear, involving aspects of family structure, male-female labor force participation, and male-female earning differentials in each country. It seems likely, for example, that the economic position of Japanese male teachers' households relative to U.S. male teachers' households is less favorable than the relative salary figures suggest, as married male teachers in the United States are probably more likely to have working wives, and the U.S. working wives are likely to be relatively better paid than working wives in Japan. However, Japanese female teachers may be more likely than U.S. female teachers to be in households with employed husbands. All this is speculative, however, since we lack data on incomes of teachers' households, and we do not know how spouses' earnings and other factors balance out. We can say only that relative salaries do not necessarily give a complete picture of the relative standards of living of teachers and their families in the United States and Japan.

A third limitation is that we have compared relative before tax salaries in the two countries, whereas teachers' relative standards of living depend more directly (or so it can be argued) on relative after tax incomes. We do not have data on the after tax incomes of teachers in either country. We do know, however, that the overall rate of taxation is lower in Japan than in the United States and, more specifically, that tax burdens in teachers' income brackets are lighter under the Japanese than the U.S. income tax system.

Teachers' Salaries Relative to Salaries in Other Occupations

Another way to assess the relative economic conditions of teachers is to compare teachers' salaries against salaries in other specific occupations and occupational groups. Unfortunately, gaps in the data and intercountry differences in definitions limit possible comparisons. In addition, problems of data compatibility raise doubts about the validity of certain comparisons. Nevertheless, we believe that the comparisons presented here, with the above caveats, do enrich the picture of how teachers are rewarded relative to other workers in the United States and Japan.

Two indicators of general wage levels in different countries are published regularly by the International Labor Office (ILO): the average wage in manufacturing and the average wage in nonagricultural activities. Teachers' salaries can be compared with both and the resulting ratios can be compared across countries. There are, however, two problems in making such comparisons between the United States and Japan. First, the ILO data for the two countries are reported in different units, hourly earnings for the United States and monthly earnings for Japan. Consequently, assumptions about average hours of work must be introduced to produce comparable figures. Second, and more troublesome, the ILO data for the United States and Japan are not for the same categories of workers.

Despite areas of data incompatibility, our comparisons show that Japanese teachers are better paid than U.S. teachers relative to both categories of production workers, but that the Japanese teacher's advantage is greater relative to those in manufacturing than to

nonagricultural workers as a whole. Specifically, the ratio of the average teachers' salary to average annual earnings in manufacturing is 37 percent higher in Japan than in the United States (1.60 versus 1.16), while the corresponding ratio to earnings in nonagricultural activities is only 18 percent higher in Japan (1.50 versus 1.27). The reason for the difference is clear: in the United States wages are higher in manufacturing than in other sectors, while in Japan the situation is reversed. Consequently, the relative economic status of Japanese teachers appears less elevated when measured against the earnings of all nonagricultural employees than when compared with manufacturing wages alone.

When we turn from comparisons with general wage indicators to comparisons with salaries in specific nonteaching occupations, the conceptual and technical difficulties multiply. First, there are intercountry differences in methods of measuring salaries and earnings. In Japan, there is often ambiguity about which allowances are included in the reported earnings of workers other than teachers. In the United States, there is the problem of translating hourly or weekly wage rates into annual earning estimates compatible with the estimates of teachers' salaries. Moreover, the Japanese data on earnings in nonteaching, private sector occupations are drawn from different sources than the data on teachers' earnings, thereby raising issues of data compatibility. Second, occupational classifications differ between the U.S. and Japan, and occupations categories do not necessarily have the same definitions, even when the names are the same. The taxonomic differences in the professional occupation categories are especially pronounced. This, in combination with data gaps in those categories, severely limits comparisons. Third, even where category definitions are consistent, differences in work force composition within an occupational category can threaten the validity of Japanese/U.S. comparisons. For instance, the age or experience distribution within a given occupation may differ between the two countries, creating an appearance of a pay differential that obscures the actual difference in salary levels or structures. Given this array of problems, the comparisons presented below should be viewed cautiously and with some skepticism.

Subject to the foregoing warning, table 7-4 presents comparative data on earnings in teaching and in selected nonteaching occupations in the United States and Japan. The nonteaching occupations were selected on the basis of the availability of comparable data and the diversity of occupational types. Limitations of both the Japanese and U.S. data, however, have precluded appropriate representation of white collar and professional occupational categories.

Although the U.S./Japan differences in relative salaries vary considerably among the occupational categories, certain patterns do emerge. In general, Japanese teachers appear to be significantly better paid in relation to workers in blue collar and manual occupations, including skilled crafts, than are U.S. teachers. In particular, salaries in some of the selected occupations are higher than salaries of teachers in the United States, but lower than those in Japan (for example, technician, electrician, pharmacist, computer programmer). Teachers' salaries are also higher relative to clerical occupations in Japan. For reasons unknown, however, the pattern does not hold in such female-oriented occupations as sales clerk, cashier, or hairdresser, where salaries are higher in Japan relative to teachers' salaries than they are in the United States. By and large, however, the Japanese teachers are better paid than the U.S. teachers relative to the employees in the occupations covered by the table.

A serious shortcoming of this set of comparisons is that it does not provide adequate coverage of professional occupations typically requiring college-level training, such as engineering, accounting, and public administration. Salaries in such fields are frequently compared with teachers' salaries in pay comparability studies in the United States, but we have been unable to obtain data that would allow meaningful intercountry comparisons. To illustrate what is missing, we have included at the bottom of table 7.4 the salaries of U.S. engineers and accountants relative to those of teachers, but we cannot provide comparable figures for Japan. Furthermore, to illustrate some of the difficulties of making comparisons in the professional categories, we have included data on certain managerial salaries in the two countries, together with notes indicating the differences in occupational taxonomy. We have no way of knowing whether the aggregated management categories in the table actually represent similar ranges of management jobs, and hence we are disinclined to read any meaning

into those comparative pay figures. To say anything definitive about the economic status of teachers compared with that of other professionals, we would need improved data on professional salaries in both Japan and the United States.

Table 7-4. Teachers' Salaries Relative to Salaries in Selected Occupations, United States and Japan, 1983

United States			*Japan*		
Occupation	*Weekly earnings (US.)*	*Index*[a]	*Occupation*	*Monthly contract earnings (thousands of yen)*	*Index*[a]
Teachers, elementary and secondary[b]	373	100	Teachers, elementary and secondary[c]	279	100
Nurse (F)[d]	371	99	Nurse (F)	219	79
Pharmacist	509	136	Pharmacist	217	78
Automobile salesman	345	92	Automobile salesman	214	77
Computer programmer	472	127	Computer programmer	206	74
Drafting occupations	369	99	Draftsman	238	85
Secretary (F)	251	67			
File clerk (F)	210	56	Clerk (F)	198	71
Typist (F)	237	64	Typist (F)	150	54
Data entry keyer (F)	238	64	Key puncher (F)	136	49
Guard	243	65	Watchman	222	80
Cook, exc. short order	172	46	Cook	216	78
Janitors and cleaners	220	59	Janitor	207	74
Electrician	424	114	Electrician	242	87
Lathe and turning machine operator	306	82	Lathe operator	229	82
Welder	354	95	Welder	226	81
Automobile mechanic	300	80	Automobile repairman	182	65
Truck driver, heavy	326	87	Truck driver	224	80
Taxi driver	246	66	Taxi driver	222	80
Assemblers (F)	226	61	Assembler, radio/TV (F)	111	40
Technician, electrical/electronic	406	109	Technician[e]	259	93
Salesworker, apparel (F)	157	42	Sales clerk, department store (F)	138	50
Cashier (F)	164	44	Cashier, supermarket (F)	125	45
Hairdressers and cosmeticians (F)	184	49	Hairdresser (F)	206	74
Managers, various[f]	531	142	Managers, administrative[g]	440	158
			Managers, technical[h]	412	148
Engineers	603	162	Engineers	-	-
Accountants/auditors	408	109	Accountants	-	-

- = data not available
(F) indicates salary is for female employees only
a. Index = salary in named occupation as percentage of salary in teaching

Footnotes b-h represent weighted average of salaries for:

b. elementary and secondary teachers
c. elementary/lower secondary and upper secondary teachers, adjusted to delete principals and vice-principals
d. registered and licensed practical nurses
e. chief technicians and technicians-in-charge
f. financial, personnel, purchasing, and marketing managers
g. branch managers, administrative department managers, and assistant managers, and administrative section managers in private industry
h. technical department managers, and managers and technical section managers in private industry

Sources: U.S. salaries: U.S. Department of Labor, Bureau of Labor Statistics (1985); Japanese salaries: Ministry of Labor and Japan Statistics Bureau (1984).

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8

PRIMARY SCHOOL TEACHERS' SALARIES IN SUB-SAHARAN AFRICA

Manuel Zymelman with Joseph DeStefano

This chapter presents an analysis of the factors affecting teachers' salaries in Sub-Saharan Africa. With the use of a computer forecasting model, this study provides forecasts of teacher cost for the next two decades for twenty Sub-Saharan countries under varying hypotheses, and suggests steps to facilitate planning teachers' salaries in Sub-Saharan Africa.

Categories of Teachers

The most important determinant of a teacher's salary is the category assigned upon entering the profession. In Sub-Saharan Africa, these categories are numerous and vary from country to country. In general, however, there are some common elements: the required qualifications, education, and teacher training, and the corresponding categories.

There are two basic systems of teacher training in Sub-Saharan Africa. In one system (secondary-level training), teachers are trained in teachers' colleges or "normal" schools. These are specialized secondary schools that students attend either immediately after completing primary education or after a preliminary cycle of lower secondary schooling that focus on teacher training. Teacher training colleges provide the students with a general secondary education and the necessary training in subjects related to education (for example, psychology, pedagogy, methodology, and so forth). A teacher training curriculum also includes a cycle of practice teaching, the completion of which is a prerequisite for certification as a qualified primary school teacher. In this kind of system, teacher certification is equivalent to a high school diploma. In the other system, primary teacher training is not part of general secondary education. Prospective teachers complete either a junior or secondary cycle of schooling and only then enter pedagogical training. The training takes place in teacher training institutes that usually function separately from the university system. No country requires a university-level degree or training for primary teacher certification, however, the training received in teacher training institutes can be considered, in many cases, to be post-secondary education. Teaching certification is obtained in addition to a secondary school diploma.

In either system, the highest salary scale corresponds to the highest level of qualification. For example, in many West African countries using post-secondary training, the category *instituteur* contains teachers who have completed lower or upper secondary schooling (brevet or baccalaureate) and the required number of years of additional teacher training. In most anglophone countries using the British system of education, the highest category is composed of teachers with an upper secondary ("O" level) diploma plus teacher training. Lower categories contain teachers who have either less training, less education, or both.

In some countries a single category contains teachers who have obtained their qualification through different means. For example, in Togo an *instituteur* (category 3) has either a lower

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secondary diploma (brevet) and three years of training or a higher secondary certificate (baccalaureate) and two years of experience. Both types of *instituteurs*, however, must succeed at a professional examination to be certified. Some examples may help to illustrate how different categories are determined.

In Mali, *maitres deuxieme cycle*, some of whom teach primary school, have completed lower secondary and four years of teacher training, while *maitres de premier cycle* have completed lower secondary and only two years of teacher training. In Ghana, Certificate A teachers are divided into two categories: those who have completed upper secondary ("O" level, eleven years of general education) and three years of teacher training and those who have completed lower secondary (ten years of general education) and four years of training. All qualified Kenyan teachers have had two years of training. In this case the different categories correspond to completed upper secondary, completed lower secondary, and completed primary. In Zambia, a classification is based not only on the teacher having the requisite number of years of education, but also on whether the teacher has passed an examination at the end of the cycle. Upper secondary leavers with two years of training are divided into two categories, those with a state diploma and those without. Teachers not holding a diploma are placed in the same grade as lower secondary leavers with teacher training.

Table 8-1 presents the various levels of education and training required for one or more categories of teachers in thirty-six countries. The total number of years of pre-service education and training is given and then broken down into the completed cycle of general education and the amount of teacher training. Where a single category is given it corresponds to the highest qualified category of primary teachers. In countries showing more than one category, the grades are numbered from lower to higher qualification.

Table 8-1 shows that the most common highest category of teacher is the one that requires lower or secondary education plus professional training. This is in line with the "professionalization" of primary teaching as advocated by UNESCO, but in each of the countries presented other categories below the "desired" level exist. These categories are rooted in the history of the development of education in Sub-Saharan Africa.

Historically, teacher training in Sub-Saharan Africa had a low priority. In the past, the need for professional training of primary school teachers was not convincingly put forward and the prevailing attitude was that any literate person could teach. It is only recently that the teaching profession has been upgraded enough to warrant specialized attention to the training of teaching professionals.

Missionaries, whose primary role was to convert Africans to Christianity and "civilize" them, also served to train the teachers they would need to staff their schools. Local mission students who earned the favor of the evangelist overseer often graduated to become catechists or pupil teachers. These preferred Africans became village teachers or were chosen to continue their education. Primary school teachers were often only primary or lower secondary graduates who received on-the-job training. Many of the older experienced teachers today are products of mission schooling (Dove 1986).

Missionaries who brought formal Western education to the area, also introduced Western models for teacher training. The patterns observed in table 8-1 of a post-lower secondary training in professional institutes or the specialized normal schools are copies of the British and French systems as transported by missionaries in the 20th century.

With independence, governments began to build up national school systems and to take over the responsibility for education and the training of teachers from the mission societies, though in many Sub-Saharan countries mission schools still function alongside the government systems of education. In 1966, seeing the need to establish international standards in the profession, UNESCO published a *Recommendation Concerning the Status of Teachers*. (1966). Principles laid down in the document intended to professionalize teaching by calling for approved teacher training courses in appropriate training institutions on the post-secondary level as a basic requirement to enter the field. The 1970s witnessed a tendency to raise the level of teacher training and to adopt the ideals of the UNESCO recommendation.

Table 8-1. Education and Training of Primary Teachers by Country and Category

Country	*Teacher category*[a]	*Total years education*[b]	*Highest cycle*[c]	*Highest grade*	*Teacher training (years)*
Benin	H	11	LS	10	1
Central African	1	14	US	13	1
Republic	2	15	US	13	2[d]
	3	15	US	13	2
Congo	1	11	LS	10	1
	2	13	LS	10	3
	3	14	US	13	1
Gabon	1	12	LS	10	2
	2	14	LS	10	4
Guinea	H	11	LS	8	3
Côte d'Ivoire	1	11	LS	10	1
	2	13	LS	10	3
Togo	2	11	LS	10	1
	3	13	LS	10	3
Ethiopia	1	13	US	12	1
	2	14	US	12	2
	3	16	US	12	4
Kenya	1	<10	P	<8	2
	2	10/12	LS	8/10	2
	3	14	US"O"	12	2[d]
	4	14	US"O"	12	2
Mauritius	1	15	US	13	2
	2	same as category 1, but with 15 years of experience			
Somalia	1	10	P	8	2
	2	13	US	12	1
Sudan	1	13	LS	9	3
	2	13	US	12	1
Uganda	1	11	P	7	4
	2	11	LS	9	2
	3	13	US	11	2
Burundi	H	12	LS	10	2
Djibouti	1	12	LS	10	2
	2	13	LS	10	3
Madagascar	1	<10	P	5	-
	2	10	P	5	5
	3	13	P	5	8
Rwanda	1	<12	P	8	-
	2	12/13	P	8	4/5
	3	14/15	P	8	6/7
Zaire	1	10	LS	8	2
	2	12	LS	8	4
Ghana	1	10	LS	10	0
	2	11	US"O"	11	0
	3	14	LS	10	4
	4	14	US"O"	11	3
Guinea Bissau	H	12	P	9	3

Table 8-1. Education and Training of Primary Teachers by Country and Category (cont'd)

Country	*Teacher category*[a]	*Total years education*[b]	*Highest cycle*[c]	*Highest grade*	*Teacher training (years)*
Liberia	H	12	LS	9	3
Nigeria	1	11	P/LS	6/9	5/3
	2	12	US"A"	12	Practice
	3	14	US"O"	11	3
Sierra Leone	1	15	US	12	3
	2	15	US	12	3
Burkina Faso	H	12	LS	10	2
Cape Verde	H	11	LS	9	2
Chad	1	12	LS	10	2
	2	13	LS	10	3
The Gambia	H	13	US"O"	11	2
Mali	1	11	LS	9	2
	2	13	LS	9	4
Mauritania	H	12	LS	9	3
Niger	1	12	LS	10	2
	2	14	LS	10	4
Senegal	1	12	LS	10	2
	2	16	US	13	3
Botswana	H	12	LS	10	2
Lesotho	H	13	LS	10	3
Malawi	1	5	P	5	0
	2	8	P	8	0
	3	12	LS	10	2
	4	14	US	10	4
Swaziland	1	12	LS	10	2
	2	14	LS	10	4
Tanzania	1	10	P	7	3
	2	13	LS	11	2
Zambia	1	8	P	8	0
	2	10	P	8	2
	3	12/14	LS/US	10/12[d]	2
	4	14	US	12	2

- = data not available.

a. H denotes the highest qualified category of primary teachers

b. Total number of years of preservice education and training

c. Highest completed cycle of general education. P = primary education; LS = lower secondary; US = upper secondary. "A" and "O" are British system advanced and ordinary levels, respectively.

d. Indicates that teachers in the category have completed the same level of education or training as the next highest category but have not received certification

Source: Data provided by country authorities.

The presence of an inadequate number of trained and qualified teachers is a problem across Sub-Saharan Africa. Table 8-2 illustrates the proportion of teachers in each grade, including unqualified teachers. It also gives the average years of experience of the teachers in each

Table 8-2. Distributions of Primary Teachers by Category and Qualification

Country	*Teacher category*[a]	*Percentage of teachers in category*[b]	*Average experience (years)*
Benin	unqualified	73.9	3.8
	2	6.6	2.1
	3	19.4	3.3
Central African Republic	unqualified	32.9	2.6
	2	42.6	3.5
	3	24.4	2.6
Equatorial Guinea	unqualified[d]	60.0	-
Guinea	unqualified	53.4	9.2
	2	46.5	9.1
Côte d'Ivoire	1	45.5	4.7
	2	54.4	6.3
Togo	unqualified	16.0	10.5
	2	56.5	7.7
	3	27.4	7.9
Ethiopia	1	20.7	2.0
	2	30.9	3.3
	3	30.3	4.1
	4	17.9	5.5
Kenya	untrained	30.6	12.4
	2	8.5	18.0
	3	18.6	17.1
	4	42.1	17.4
Mauritius	1	92.2	14.1
	2	7.7	19.6
Somalia	unqualified	68.7	-
	temporary	34.3	-
	3	2.5	-
Uganda	unqualified	50.0[c]	-
Burundi	1	66.0	7.6
	2	33.9	5.0
Djibouti	1	59.9	8.5
	2	40.0	10.4
Madagascar	unqualified	8.9	11.0
	2	79.2	14.1
	3	11.8	7.9
Rwanda	unqualified	21.9	13.0
	2	65.2	4.2
	3	12.8	6.3
Zaire	1	58.5	12.4
	2	41.5	5.3
Ghana	unqualified	36.0[c]	-
Guinea-Bissau	unqualified	42.5	-
Liberia	unqualified	71.0[c]	-

Table 8-2. Distributions of Primary Teachers by Category and Qualification (cont'd.)

Country	*Teacher category*[a]	*Percentage of teachers in category*[b]	*Average experience (years)*
Nigeria	unqualified	12.7	-
	2	23.9	-
	3	57.7	-
	4	5.7	-
Sierra Leone	unqualified	61.0[c]	-
Burkina -Faso	1	63.6	4.2
	2	34.3	13.0
Cape Verde	unqualified	83.7	-
Chad	unqualified	59.2	-
	2	20.6	-
	3	19.4	-
The Gambia	unqualified	64.5	4.9
	2	35.4	9.4
Mali	1	62.3	12.3
	2	37.6	4.5
Mauritania	unqualified	6.9	7.3
	2	10.2	6.1
	3	82.8	4.3
Niger	unqualified	15.9	3.4
	2	70.3	5.6
	3	13.6	5.1
Senegal	unqualified	1.5	9.4
	2	45.3	7.6
	3	53.1	8.5
Botswana	unqualified	36.0[c]	-
Lesotho	unqualified	36.0[c]	-
Malawi	unqualified	15.7	-
	qualified	84.2	-
Swaziland	unqualified	23.0[c]	-
Tanzania	1	74.2	-
	2	25.7	-
Zambia	unqualified	15.0	-
	2	8.3	13.5
	3	49.0	4.0
	4	20.0	2.1
Zimbabwe	unqualified	40.0	-

- = not available

a. Unless otherwise noted, "unqualified" in this category is defined as having completed less than upper secondary general education and having had no professional training, or having completed primary education and having had only minimal professional training.

b. Percentages in table rounded to nearest whole percentage point.

b. Percentages in table rounded to nearest whole percentage point.

d. Unqualified here is defined as having received no professional training.

Source: Dove (1986)

category so that some assumptions can be made about the relative ages of the teachers in the different groups and the hiring practices of the different countries.

In the thirty-three countries for which data are available, there are ten where the majority of the teachers are unqualified. In only three countries, Côte d'Ivoire, Senegal, and Mauritania, are the majority of the teachers in the "desired" category. The average years of experience of teachers in each category provides an indication of recent hiring trends. Two distinct patterns emerge from the data. One group consists of countries in which the unqualified or least qualified categories of teachers are a minority of the teaching force and have more average years of experience than the more qualified teachers. This would indicate that the lower qualified category is being phased out and the system is being upgraded, because new hires consist of more qualified personnel. Good examples of this are Rwanda, Togo, and Zambia. In Rwanda, the unqualified teachers, those having completed primary but with an incomplete specialized secondary education, make up 21.9 percent of the teaching force and are, on average, two or three times as experienced as their qualified colleagues.

The other group of countries show an opposite pattern of experience and distribution of teachers in the different categories. For example, Burkina Faso has 63.7 percent of its teachers in the lower qualified category, and these teachers have, on average, about a third of the experience of the more qualified instructors. The Gambia, similarly, has a teaching force that is 64.5 percent unqualified, and those teachers are about half as experienced as their qualified peers. This type of pattern of experience and teacher distribution would indicate that lower qualified or unqualified categories of teachers are only recent hires, and that the system has been experiencing a downgrading of its teachers. These different patterns are probably the result of different rates of expansion of primary education accompanied by a budget squeeze. For the examples cited above, the countries experiencing an upgrading—Rwanda, Zambia, and Togo—had seen their numbers of teachers grow by 25, 27, and 9 percent, respectively, between 1980 and 1985. The countries exhibiting a downgrading of teacher qualifications—Burkina Faso and The Gambia—experienced a 64 percent growth in their teaching force during those same years. The pressure of a rapidly expanding system and the low production of qualified teachers because of budgetary restrictions compelled these systems to hire less qualified teachers.

As can be seen in table 8-2, many Sub-Saharan countries have significant proportions of unqualified and underqualified personnel presently in their teaching forces. Any recommendations concerning improvements in the quality of primary education in Africa must address the large numbers of untrained teachers already in the field.

Comparison of Salary Structures

In comparing structures of salary scales, two factors should be considered: the ratio of maximum and minimum salaries in each category, and the years required to go from the minimum to the maximum. The average salary increase per year for a teacher in a given category (the slope of the salary scale) is determined by these factors. To facilitate analysis, all ratios are referred to a numeraire, the entry salary of the least qualified teacher. Table 8.3 presents this information for twenty-two Sub-Saharan African countries.

The countries with the smallest initial salary differentials between the highest and least qualified categories of teachers (ratio of minimum salary of highest category to minimum salary of lowest category) are Zaire (1.08), Senegal (1.22), Burkina Faso (1.21), Djibouti (1.28), and Sierra Leone (1.39). Largest differentials of maximums of highest and lowest categories are evident in Togo (2.78), Malawi (2.28), Niger (2.28), Kenya (2.2), and Rwanda (2.19). When the slopes of higher category teachers is greater than those of lower category teachers, the ratio of maximums between categories becomes larger. This is the case of Sierra Leone and Senegal, where the ratios among the maximums of the different categories are 3.25 and 1.64, respectively. This pattern is evident in seven of the twenty-two countries. When the slope is similar (in eleven of the twenty-two cases) the ratios among maximums remain the same as

Table 8-3. Structure of Salary Scales by Country

Country	*Teacher category*	*Ratio of salaries to min. salary, category*[1] *Min.*	*Max.*	*Years from min. to max. salary*	*Percentage change per year in salary*
Benin	1	1.00	1.80	17	3.52
	2	1.25	2.30	17	3.65
	3	1.40	2.66	17	3.82
Central African Republic	1	1.00	1.66	18	2.87
	2	1.54	3.32	23	3.39
	3	1.88	3.96	21	3.60
Guinea	1	1.00	1.60	19	1.91
	2	1.50	2.58	26	2.06
Côte d'Ivoire	1	1.00	1.60	19	2.49
	2	1.83	3.41	23	3.75
Togo	1	1.00	2.48	21	4.42
	2	2.04	3.89	23	2.85
	3	2.78	6.48	23	3.75
Ethiopia	1	1.00	2.13	21	3.67
	2	1.19	2.42	21	3.44
	3	1.50	2.91	21	3.19
	4	1.86	3.48	21	3.02
Kenya	1	1.00	2.40	22	4.05
	2	1.64	2.87	16	3.56
	3	1.91	3.19	15	3.49
	4	2.68	4.80	16	3.44
Mauritius	1	1.00	2.17	19	4.15
	2	2.17	2.57	6	2.88
Sudan	1	1.00	3.25	29	4.16
	2	1.08	3.25	27	4.18
Burundi	1	1.00	2.10	13	5.89
	2	1.60	3.21	13	5.50
Djibouti	1	1.00	1.41	18	2.59
	2	1.28	2.30	24	2.46
Madagascar	1	1.00	1.46	18	2.11
	2	1.26	1.90	18	2.28
	3	1.69	2.84	18	2.92
Rwanda	1	1.00	2.66	28	3.55
	2	1.66	3.69	28	2.90
	3	2.19	5.16	28	3.10
Zaire	1	1.00	1.81	28	2.13
	2	1.08	1.96	28	2.14
Ghana	1	1.00	1.11	5	2.15
	2	1.14	1.34	8	2.01
	3	1.56	1.90	13	1.51
	4	1.70	1.90	8	1.38
Nigeria	1	1.00	2.68	15	6.79
	2	1.13	3.06	15	6.85
	3	1.38	3.73	15	6.85
	4	1.81	5.10	15	7.16

Table 8-3. Structure of Salary Scales by Country (cont'd.)

Country	*Teacher category*	*Ratio of salaries to min. salary, category*[1] *Min.*	*Max.*	*Years from min. to max. salary*	*Percentage change per year in salary*
Sierra Leone	1	1.00	1.56	-	-
	2	1.07	2.05	-	-
	3	1.39	5.07	-	-
Burkina Faso	1	1.00	2.04	24	3.02
	2	1.21	2.32	18	3.69
The Gambia	1	1.00	1.10	6	1.56
	2	1.57	2.68	30	1.80
Mali	1	1.00	1.53	29	1.47
	2	1.23	1.71	20	1.67
Mauritania	1	1.00	1.34	24	1.23
	2	1.31	1.77	24	1.26
	3	1.31	2.42	24	2.59
Niger	1	1.00	2.08	21	3.55
	2	1.37	2.73	21	3.36
	3	2.28	4.73	21	3.55
Senegal	1	1.00	1.18	25	0.66
	2	1.05	1.36	21	1.23
	3	1.22	1.94	21	2.23
Malawi	1	1.00	1.68	9	5.90
	2	1.23	2.08	9	6.03
	3	1.88	2.93	9	5.07
	4	2.28	3.40	9	4.57
Zambia	1	1.12	1.12	-	-
	2	1.00	1.62	19	2.58
	3	1.48	1.87	11	2.15
	4	1.56	2.53	17	2.88

- = not available
Source: Data provided by country authorities.

they were for the minimums. For example, for Zaire, Djibouti, and Burkina Faso the ratios of maximums are 1.04, 1.24, and 1.13, respectively. In only two cases, Rwanda and Malawi, the slope for the higher category of teachers is lower than those of the lower category.

Supplements to Teachers' Pay

The section on supplements to teacher salaries in chapter 3 of this volume discussed the different types of additional payments received by teachers. The salary supplements discussed here are what the earlier section referred to as supplements related to welfare: namely, housing, family, and hardship allowances. In some Sub-Saharan African countries primary teachers receive other allowances (for example, for travel or study), but these types of allowances are paid only to those teachers incurring additional expenses (through work-related travel or in continuing their education). It would be difficult to estimate the numbers of

teachers benefiting from supplements of this nature. Therefore, the discussion here is limited to the kinds of allowance most teachers receive regularly.

Not all Sub-Saharan African countries provide teachers with housing. In those countries that do, if direct monthly payments are not received to cover housing costs, the government usually provides teachers with a place to live. For example, in Zambia the government provides teachers with housing for which they must pay 12.5 percent of their monthly salary as rent. If teachers make their own housing arrangements, they receive a tax free monthly allowance of 90 kwacha. Housing supplements can constitute as much as a 27 percent addition to a teacher's monthly salary, as is the case in Senegal.

Family allowances are more common and range from less than a 1 percent increase in a teacher's remuneration in Zaire, to as much as a 16 percent increase in Togo. The family supplements are based on the number of children, and they allow a per child payment usually for up to six children.

Only teachers working in specified regions of a country receive hardship supplements. In some cases, a predetermined percentage of a teacher's base salary is awarded as compensation for working in any of the hardship areas. For example in Kenya, teachers working in any of eleven districts receive a 30 percent supplement, up to a maximum of 1,200 shillings per month for married personnel. In other Sub-Saharan African countries the amount of the supplement depends on the district in which the teacher is posted. In Mali, teachers working in one of seventeen zones receive a hardship allowance equal to roughly 5 percent of their base salary, while teachers working in certain parts of the Cao region receive an allowance equal to about 14 percent of their base pay.

No data are available on the numbers of teachers in different countries actually receiving various supplemental payments. For this reason, it is difficult to estimate the budgetary impact of teacher salary supplements; some indication, however, of the cumulative size of housing, family, and hardship salary supplements is presented in table 8-4. The monthly

Table 8-4. Monthly Supplements to Primary Teacher Salaries as a Percentage of the Average Monthly Salary[a]

Country	*Average salary (in local currency)*	*Supplement as percentage of average salary*	*Percentage of supplement for*		
			Housing	*Family*	*Hardship*
Benin[a]	36,190	6.38	-	-	-
Burkina[a]	44,273	45.17	-	-	-
Madagascar	72,114	8.60	-	100	-
Mali	44,106	21.92	16	41	43
Mauritius[a]	2,625	0.19	-	-	-
Senegal	146,308	32.32	85	15	-
Zaire	4,711	8.81	95	5	-
Zambia	539	16.69	100	-	-
Togo	48,910	16.36	-	100	-
Côte d'Ivoire	171,687	20.82	-	28	72

- = not available

a. International Labour Organisation data.

Note: The figures assume that a typical teacher receives the average housing and hardship allowances and the family allowance for a married parent of four children

Source: Data collected by author as part of a research project.

supplements included in these estimations are based on the assumption that a teacher receives the average housing and hardship allowances, and the family allowance for a married parent of four children.

Total salary supplements can constitute a 32 percent increase in the teacher salary bill, as in Senegal, or as little as an 8 to 9 percent increase as in Madagascar or Zaire. On average, the various allowances create a 20 percent augmentation in the base salary costs for primary teachers.

The Relative Value of Primary Teachers' Salaries

To assess the economic situation of teachers in Sub-Saharan Africa, it is necessary to compare teachers salaries with salaries of other occupations and with GNP per capita, and to analyze the time trend of real salaries (salaries adjusted by the cost of living index).

Ratio of Teacher Salaries to GNP per capita

The ratio of the average primary teacher salary to the gross national product per capita (GNPCAP) for Sub-Saharan Africa is 6.34 with a standard deviation of 3.5 (see table 8.5). This indicates that the ration takes on a broad range of values in Africa, going from a low of 1.5 in Equatorial Guinea and Ghana to a high of 14.7 in Ethiopia.

Table 8-5. Average Primary Teacher Salaries Compared to GNPCAP, 1985

Country	*Average teacher salary (in local currency)*	*GNPCAP (in local currency)*	*Ratio of average teacher salary to GNPCAP*	*Francophone country (x = yes, o = no)*	*World Bank region*
Benin	425,439	127,176	3.3	x	AF1
Central African Republic	913,353	121,300	7.5	x	AF1
Equatorial Guinea	180,000	121,300	1.5	o	AF1
Côte d'Ivoire	2,121,081	270,402	7.8	x	AF1
Ethiopia	3,341	228	14.7	o	AF2
Kenya	23,777	4,528	5.3	o	AF2
Mauritius	146,110	15,525	9.4	x	AF2
Sudan	6,100	760	8.0	o	AF2
Burundi	210,548	30,460	6.9	x	AF3
Madagascar	577,002	165,620	3.5	x	AF3
Rwanda	229,437	29,366	7.8	x	AF3
Zaire	26,207	8,478	3.1	x	AF3
Ghana	38,989	25,326	1.5	o	AF4
Guinea-Bissau	179,385	27,135	6.6	o	AF4
Burkina	696,339	69,488	10.0	x	AF5
Cape Verde	81,900	37,203	2.2	o	AF5
Chad	267,060	50,120	5.3	x	AF5
The Gambia	2,771	896	3.1	o	AF5
Mali	821,804	65,100	12.6	x	AF5
Mauritania	302,567	31,605	9.6	x	AF5
Niger	828,119	89,852	9.2	x	AF5
Senegal	1,614,977	166,226	9.7	x	AF5
Botswana	5,395	1,809	3.0	o	AF6
Malawi	1,117	293	3.8	o	AF6
Swaziland	3,879	1,445	2.7	o	AF6
Tanzania	39,772	4,293	9.3	o	AF6
Zambia	4,151	1,057	3.9	o	AF6
Zimbabwe	5,445	904	6.0	o	AF6

Source: Data collected by author as part of a research project.

Table 8-5 also shows that francophone countries in Sub-Saharan Africa have a higher mean ratio of average primary teacher salary to GNPCAP (7.6) than non-francophone

Summary Statistics: Ratio of Average Primary Teacher Salaries to GNPCAP

Area	*Mean*	*Variation*	*Standard deviation*	*Sample size*
Total sample	6.34	11.881	3.447	28
Francophone countries	7.56	8.190	2.862	14
Other	5.11	13.246	3.639	14
Regions:				
AF1	5.05	9.860	3.140	4
AF2	9.34	15.631	3.954	4
AF3	5.33	5.697	2.387	4
AF4	4.08	12.859	3.586	2
AF5	7.72	13.796	3.714	8
AF6	4.78	6.186	2.487	6
GNPCAP				
≤$U.S. 200	8.17	17.420	4.174	8
>$U.S. 200	5.60	8.730	2.955	20

Source: Data collected by author through questionnaires.

countries (5.1). There is, however, considerable variation in both subgroups. Summary statistics for the six World Bank regions are also given in table 8.5.

No relationship between the ratio of average teacher salary to GNPCAP and the level of national income of a country is apparent for the full Sub-Saharan sample, though in low-income countries (GNPCAP ≤ $U.S.200) a negative relationship between these variables does exist.[1]

In very low-income countries a teacher's salary is many times the national income per capita, but this higher ratio is more a reflection of the low national income per capita rather than the high level of teachers' salaries. With GNPCAP below US$200, having any salaried "modern sector" occupation virtually guarantees an individual a salary well above the national per capita income.

Relative Wages

Comparing average primary teacher salaries to GNPCAP does facilitate cross country comparisons, but this ratio alone does not indicate the relative value of teachers' salaries compared to other occupations' wages. A comparison of average teacher salaries to the average salaries of other occupations affords an estimate of the relative status of the teaching profession.

International Labour Organisation (ILO) data on the average salaries of stenographer/typists in the wholesale trade and banking sector and of auto mechanics were compared to the average salaries of primary teachers in a given year (1985 or 1986). The ratios of the average primary teacher salary to the average stenographer/typist salary and average auto mechanic salary were computed for nine countries and are show in table 8.6. In six of the nine countries, primary teachers earned an average salary that was less than the average wage

1. Regression of the ratio of average primary teacher salaries on GNPCAP for the subsample of eight countries with GNPCAP ≤ US$200 resulted in a beta estimate of -4.7 with a standard error of 2.0 and an R2 of 0.48. The regressions for the full sample and for the subsample of countries with GNPCAP ≥ US$200 did not have significant results.

of stenographer/typists, and in six out of eight countries teachers, on the average, earned more than auto mechanics. The mean relative wages of primary teachers to stenographer/typists and to auto mechanics are 0.75 and 1.22, respectively. In general, teachers have a status above that of auto mechanics, but below that of stenographer/typists. Two extreme examples exist, Mali and Cape Verde, in which teachers are paid less than both these other occupations.

Table 8-6. Teacher Wage Rates as Compared to Other Occupations

	Average annual wage rates (in local currencies)					*Wage rate ratios*	
	Stenographer/typist						
Country	*Wholesale industry*	*Banking sector*	*Average*	*Auto mechanic*	*Primary teacher*	*Primary teacher: stenog./typist (avg.)*	*Primary teacher: auto mechanic*
Mali	640,956	540,000	590,478	540,000	513,948	0.87	0.95
Burkina	460,560	498,528	479,544	460,560	531,276	1.11	1.15
Burundi	363,987	572,762	468,374	176,389	210,548	0.45	1.19
Benin	515,400[a]	-	-	-	565,595	1.10	-
Rwanda	231,840	198,720	215,280	144,000	229,437	1.07	1.59
Kenya	29,972	83,250	56,611	14,539	15,804	0.28	1.09
Zambia	4,248	7,492	5,870	3,600	5,664	0.96	1.57
Sierra Leone	-	17,565	17,565	3,402	6,055	0.34	1.78
Cape Verde	126,000	160,800	143,400	186,000	81,900	0.57	0.44

- = not available

a. Wage is for receptionist in the hotel industry.

Source: ILO (1987)

Real Average Teacher Salaries in the 1980s

Further insight into the relative value of teachers salaries can be gained by examining trends in average salaries over time. Table 8.7 shows real average primary teacher salaries in eighteen Sub-Saharan African countries from 1980 to 1985 (with 1980 as the base year). On average, real primary teacher salaries declined 11.5 percent between 1980 and 1985. In only two countries (Rwanda and Niger), have average primary teacher salaries increased in real terms. In ten countries the overall decline exceeded 10 percent, with the extreme cases of Zimbabwe and the Central African Republic, in which real primary teacher salaries declined about 37 percent. In five of the ten countries, real average primary teacher salaries remained fairly constant. Table 8-7 also shows summary statistics for different subsamples within this group.

In several countries the trend in real average primary teacher salaries follows a decreasing, then increasing, then decreasing pattern. This pattern can be explained by the deterioration in real salaries due to inflation being followed by a sudden rise in real salaries when the government grants a pay increase. That increase is then subsequently eroded by the continued effect of inflation.

As discussed earlier, the natural tendency of primary teacher average salaries, because of salary structures, is to increase over time as teachers move up the pay scale. In Sub-Saharan Africa, the general decline in real average teacher salaries is magnified by this fact because the 11.5 percent average decrease in real salaries occurred while average salaries should have been increasing.

Table 8-7. Indices of Change in Real Average Teacher Salaries, 1980-85 (1980=100)

Country	1980	1981	1982	1983	1984	1985
Central African Republic	100	104	98	88	96	63
Côte d'Ivoire	100	93	85	86	96	88
Mauritania	100	98	106	97	96	93
Burundi	100	96	89	81	74	77
Madagascar	100	100	64	57	61	71
Rwanda	100	160	145	130	147	149
Ghana	100	91	76	61	45	96
Burkina	100	110	98	132	96	81
The Gambia	100	106	95	73	69	98
Mali	100	105	99	91	83	90
Mauritius	100	100	85	100	92	83
Niger	100	117	107	123	111	116
Senegal	100	84	84	77	76	74
Malawi	100	96	99	96	94	96
Zambia	100	83	89	113	88	-
Zimbabwe	100	92	89	72	55	63
Kenya	100	98	84	73	68	71
Swaziland	100	82	89	76	92	96

- = data not available.

Summary Statistics: Percentage Decline in Real Average Teacher Salaries, 1980-85

Category	*Mean*	*Variation*	*Standard deviation*	*Sample size*
Total sample[a]	17.03	143.08	11.96	16
Francophone countries	20.04	95.90	9.79	9
Other	13.15	198.70	14.10	7
GNPCAP				
≤$U.S. 300	19.08	165.55	12.87	8
>$U.S. 300	14.98	131.43	11.46	8

a. Excludes the countries in which real average teacher salaries increased (Rwanda and Niger).

Indices of Change in Real Average Manufacturing Wages, 1980-85 (1980=100)

Country	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*
Kenya	100	99	92	89	89	82
Mauritius	100	101	93	98	99	99
Malawi	100	101	136	96	79	67
Swaziland[a]	100	78	65	61	63	68
Zambia	100	83	78	71	59	-
Zimbabwe	100	109	114	105	98	103
Burundi	100	145	125	105	127	124
Botswana	-	100	86	101	105	-

- = not available.
a. For Swaziland, real average wages in the transportation, storage, and communication sectors were used.

Source: ILO (1980-85).

Relative Wages Over Time

Table 8-8 presents the relative average wage of primary teachers to workers in the manufacturing sector from 1980 to 1985. In Kenya, Malawi, Swaziland, and Zambia, real average wages for both teachers and manufacturing workers decreased in the 1980s (see table 8.7). In Kenya, however, the relative wage of teachers to manufacturing workers decreased, indicating that teachers' salaries were more eroded by inflation than were the salaries of workers in manufacturing. In the other three countries, of this group the relative wage increased; evidence that inflation had the opposite effect.

Table 8-8. Relative Average Salaries of Primary Teachers to Manufacturing Workers, 1980-85

Country	*1980*	*1981*	*1982*	*1983*	*1984*	*1985*
Kenya	1.00	1.00	0.92	0.83	0.77	0.87
Mauritius	3.25	2.81	2.33	2.45	2.10	1.78
Malawi	0.91	0.86	0.67	0.91	1.09	1.32
Swaziland[a]	0.41	0.44	0.56	0.52	0.61	0.59
Zambia	1.05	1.05	1.19	1.66	1.56	-
Zimbabwe	1.71	1.43	1.33	1.16	0.96	1.04
Burundi	1.52	1.09	1.04	0.99	0.95	1.01
Botswana	-	1.16	1.28	1.04	1.20	-

Indices of Change in Relative Salaries, 1980-85

Country	1980	1981	1982	1983	1984	1985
Kenya	100	99	92	82	77	86
Mauritius	100	87	72	75	65	55
Malawi	100	95	73	100	119	145
Swaziland[a]	100	105	136	125	146	142
Zambia	100	100	114	158	148	-
Zimbabwe	100	84	78	68	56	61
Burundi	100	71	68	65	62	66
Botswana	-	100	110	89	103	-

- = not available.

a. For Swaziland, primary teacher average salaries are compared to average salaries in the transportation, storage, and communication sectors as defined by the ILO.

Source: ILO Yearly Bulletins, 1980-85.

In Mauritius, Zimbabwe, and Burundi, real wages in manufacturing increased or remained the same while real average primary teacher salaries decreased. This resulted in a greater decline of teachers' relative wages than in Kenya.

The Impact of Salary Scales in Sub-Saharan Africa on Future Costs of Primary Education

Future costs of primary schooling in Sub-Saharan African countries will depend not only on the number of students to be educated and the technology used, but also on the average salary of teachers, as teacher salaries are the largest expenditure item in primary education (in Sub-Saharan Africa, teacher salaries account for more than 90 percent of the budget). Average teachers' salaries are a function of (a) the characteristics of salary schedules (minimum and maximum salaries, rate of progression, frequency of promotion, and so forth); (b) the distribution of teachers among the different categories (qualified, unqualified, and so forth); (c) the initial distribution of teachers on the salary scale within each category; and (d) the rate of increase of the teaching force. A forecast of teachers salaries for nineteen Sub-Saharan African countries shows that for all countries, we may expect an upward drift in average salaries. This upward drift will be strongest during the next ten years and weaker from years eleven to twenty.

Table 8-9 presents the drift in salaries as measured in yearly rates of increase of average salaries and total costs. Column (1) presents the case where the number of teachers in each category remains constant, that is, attrition of teachers in each category is compensated by teachers entering the profession at the lowest end of the salary scale of the corresponding category. Columns (2) to (6) assume that the number of teachers increases at 3 percent, corresponding to the average increase of the school-age population. Results shown in column (2) are based on the assumption that the proportion of teachers in different categories remains unchanged. We define type 1 as the least qualified teacher, type 4 as the most qualified. Column (3) assumes that all increases will be of teachers of type 1; column (4) assumes that all the increase will be of type 2; column (5) assumes that all the increase will be of type 3; and column 6 assumes that all the increase will be of type 4. The impact of the different assumptions for Burundi can be seen clearly in figure 8-1.

Table 8.9. Twenty Year Forecasts of Rates of Growth of Average Teacher Salaries and Total Teacher Costs by Country
(percent)

		Three percent annual growth in total number of teachers											
		(1) Constant total number of teachers		*(2) With constant proportion of teachers in categories 1-4*		*(3) With entire increase from category (1) teachers only*		*(4) With entire increase from category (2) teachers only*		*(5) With entire increase from category (3) teachers only*		*(6) With entire increase from category (4) teachers only*	
Country	*Growth factor*	*1-10 years*	*11-20 years*	*1-10 years*	*11-20 years*	*1-10 years*	*11-20 years*	*1-10 years*	*11-20 years*	*1-10 years*	*11-20 years*	*1-10years*	*11-20 years*
Benin	Average teacher salaries	3.39	0.80	2.40	0.54	2.15	0.32	2.76	0.86	3.17	1.16	-	-
	Total teacher costs	3.39	0.80	5.47	3.25	5.21	3.02	5.84	3.58	6.26	3.89	-	-
Central African Republic	Average teacher salaries	3.27	1.78	2.35	1.17	1.56	0.41	2.50	1.34	3.07	1.71	-	-
	Total teacher costs	3.27	1.78	5.42	3.90	4.61	3.11	5.57	4.08	6.16	4.45	-	-
Guinea	Average teacher salaries	1.42	-0.32	0.56	-0.20	0.15	-0.82	1.00	0.41	-	-	-	-
	Total teacher costs	1.42	-0.32	3.57	2.49	3.15	1.86	4.03	3.12	-	-	-	-
Cote d'Ivoire	Average teacher salaries	2.61	0.94	1.63	0.54	0.85	-0.48	2.17	0.96	-	-	-	-
	Total teacher costs	2.61	0.94	4.68	3.25	3.88	2.21	5.24	3.68	-	-	-	-
Togo	Average teacher salaries	2.70	-0.03	1.52	-0.15	0.51	-1.60	1.41	-0.34	2.24	0.92	-	-
	Total teacher costs	2.70	-0.03	4.56	2.54	3.52	1.05	4.46	2.34	5.31	3.64	-	-
Ethiopia	Average teacher salaries	2.96	1.90	2.06	1.23	1.46	0.83	1.77	1.05	2.28	1.37	3.27	1.70
	Total teacher costs	2.96	1.90	5.13	3.96	4.50	3.54	4.83	3.77	5.35	4.11	5.95	4.44
Kenya	Average teacher salaries	1.66	-1.03	0.64	-0.67	-	-	0.29	-1.00	0.65	-0.53	2.04	0.68
	Total teacher costs	1.66	-1.03	3.66	2.01	-	-	3.29	1.67	3.67	2.15	4.60	3.39
Mauritius	Average teacher salaries	0.47	-1.93	-0.43	-1.19	-	-	-	-	-	-	-	-
	Total teacher costs	0.47	-1.93	2.56	1.47	-	-	-	-	-	-	-	-
Burundi	Average teacher salaries	2.28	-0.45	1.26	-0.27	0.90	-0.71	1.22	0.41	-	-	-	-
	Total teacher costs	2.28	-0.45	4.30	2.42	3.93	1.96	4.25	3.12	-	-	-	-
Djibouti	Average teacher salaries	1.48	-0.48	0.60	-0.41	0.34	-0.88	1.01	0.04	-	-	-	-
	Total teacher costs	1.48	-0.48	3.62	2.28	3.36	1.79	4.04	2.73	-	-	-	-
Madasgascar	Average teacher salaries	0.55	-1.53	-0.23	-0.89	-0.95	-2.36	-0.26	-1.02	0.80	0.71	-	-
	Total teacher costs	0.55	-1.53	2.76	1.78	2.02	0.27	2.73	1.65	3.92	3.42	-	-

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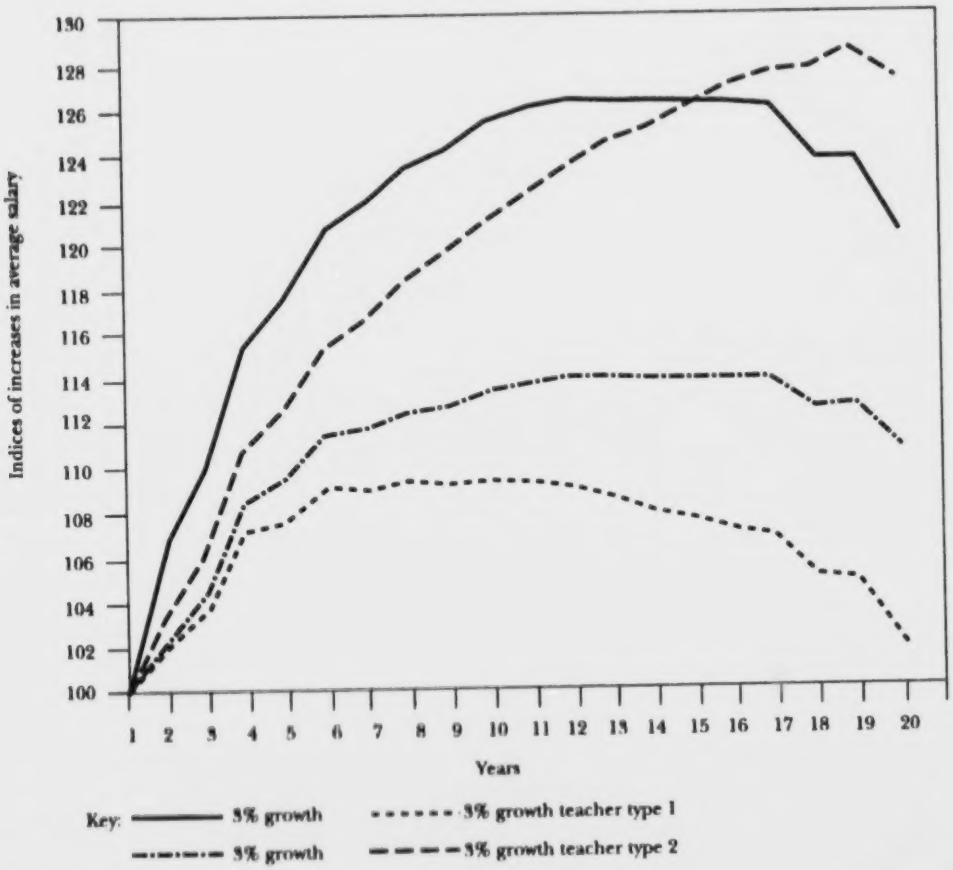
Table 8.9. Twenty Year Forecasts of Rates of Growth of Average Teacher Salaries and Total Teacher Costs by Country (continued)

		Three percent annual growth in total number of teachers											
		(1) Constant total number of teachers		*(2) With constant proportion of teachers in categories 1-4*		*(3) With entire increase from category (1) teachers only*		*(4) With entire increase from category (2) teachers only*		*(5) With entire increase from category (3) teachers only*		*(6) With entire increase from category (4) teachers only*	
Country	*Growth factor*	*1-10 years*	*11-20 years*	*1-10 years*	*11-20 years*	*1-10 years*	*11-20 years*	*1-10 years*	*11-20 years*	*1-10 years*	*11-20 years*	*1-10years*	*11-20 years*
Rwanda	Average teacher salaries	1.81	0.54	0.78	0.22	-0.08	-0.68	0.91	0.36	1.68	1.15	-	-
	Total teacher costs	1.81	0.54	3.80	2.92	2.92	2.00	3.94	3.06	4.73	3.87	-	-
Zaire	Average teacher salaries	1.10	0.56	0.32	0.32	0.24	0.24	0.48	0.44	-	-	-	-
	Total teacher costs	1.10	0.56	3.33	3.02	3.25	2.94	3.50	3.15	-	-	-	-
Burkina Faso	Average teacher salaries	1.99	-0.73	0.85	-0.48	0.94	-0.34	0.72	-0.21	-	-	-	-
	Total teacher costs	1.99	-0.73	3.87	2.20	3.96	2.35	3.74	2.48	-	-	-	-
The Gambia	Average teacher salaries	0.36	0.42	-0.11	0.26	-0.23	-0.04	0.53	0.87	-	-	-	-
	Total teacher costs	0.36	0.42	2.88	2.96	1.79	1.95	3.55	3.59	-	-	-	-
Mali	Average teacher salaries	1.11	-0.21	0.56	0.02	0.53	-0.34	0.65	0.06	-	-	-	-
	Total teacher costs	1.11	-0.21	3.58	2.71	2.50	1.59	3.67	2.76	-	-	-	-
Mauritania	Average teacher salaries	1.98	1.08	1.28	0.65	0.44	-0.21	1.16	0.39	1.37	0.76	-	-
	Total teacher costs	1.98	1.08	4.32	3.36	3.45	2.48	4.20	3.10	4.41	3.47	-	-
Niger	Average teacher salaries	2.94	1.21	1.92	0.75	1.17	0.11	1.80	0.61	3.20	1.86	-	-
	Total teacher costs	2.94	1.21	4.97	3.46	4.20	2.81	4.86	3.32	6.30	4.61	-	-
Senegal	Average teacher salaries	1.32	0.09	0.56	0.02	0.05	-0.72	0.27	-0.40	0.80	0.35	-	-
	Total teacher costs	1.32	0.09	3.58	2.71	3.05	1.95	3.28	2.29	3.82	3.05	-	-
Zambia	Average teacher salaries	1.38	-0.00	0.76	0.01	-	-	0.06	-0.40	0.91	0.17	1.56	0.74
	Total teacher costs	1.38	-0.00	3.79	2.71	-	-	3.07	2.28	3.94	2.87	4.20	3.46
Average annual rates of growth across countries:													
	Average teacher salaries	1.78	0.07	0.91	0.04	0.55	-0.46	1.04	0.21	1.70	0.78	2.29	1.04
	Total teacher costs	1.78	0.07	3.94	2.74	3.44	2.13	4.07	2.91	4.75	3.49	4.92	3.76

- = not applicable
Source: Data calculated from computer simulations.

Figure 8-1. Trends in Average Teacher Salaries in Burundi



In the case shown in figure 8-1, average salaries under the assumptions of columns (1) to (4) in table 8-9 follow a bell-shaped pattern. The difference between average salaries under the assumptions of columns (3) and (4) is over 25 percent. The group of Sub-Saharan African countries show four basic patterns of upward drift illustrated in figure 8-2, which is based on the figures in column (1).[2] Figure 8-2a shows countries where the upward drift is continuous; figure 8-2b shows countries where the increase in the first ten years is substantial and the increase in the last years is smaller; figure 8-2c shows countries where the increases of the two periods are small; and figure 8.2d shows countries where there is a substantial increase in the first period and very small, or even negative, growth in the second.

2. It is interesting to note that in the majority of cases there is a change around the tenth year. The reason for this is that the bulk of the present teaching force is relatively young (see table 8.2). After ten years many in this group will reach the plateau of maximum salaries and stay there until retirement. As a result, with new teachers coming in at the lower salary step, the rate of growth of salaries will fall. Whereas during the first 10 years the majority continues to climb the salary ladder, only a smaller proportion will do so during the following ten years.

Figure 8-2a. Projected Average Salaries (under equilibrium) for Central African Republic, Ethiopia, Nigeria, Côte d'Ivoire, Zaire, and Mauritania

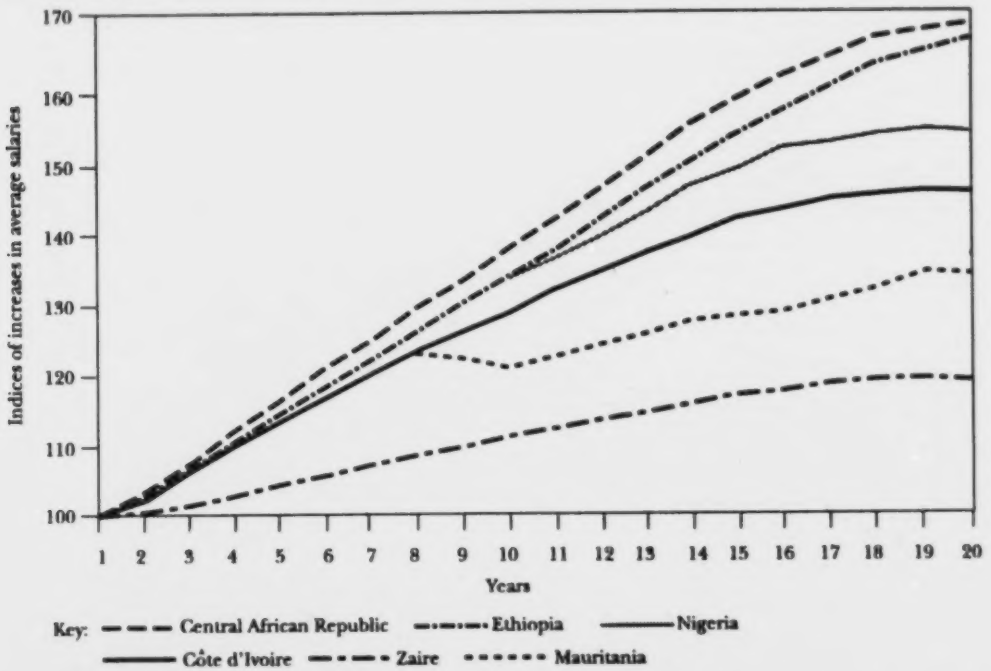


Figure 8-2b. Projected Average Salaries (under equilibrium) for Benin, Malawi, Rwanda, Senegal, and Zambia

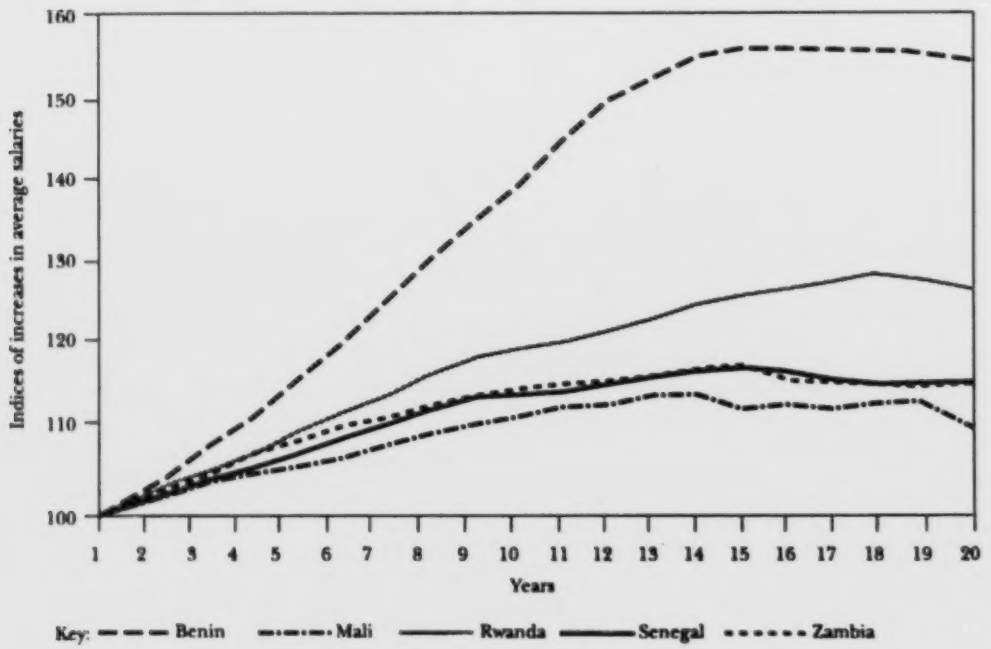


Figure 8-2c. Projected Average Salaries (under equilibrium) for Burkina Faso, Burundi, Djibouti, Kenya, Guinea, and Togo

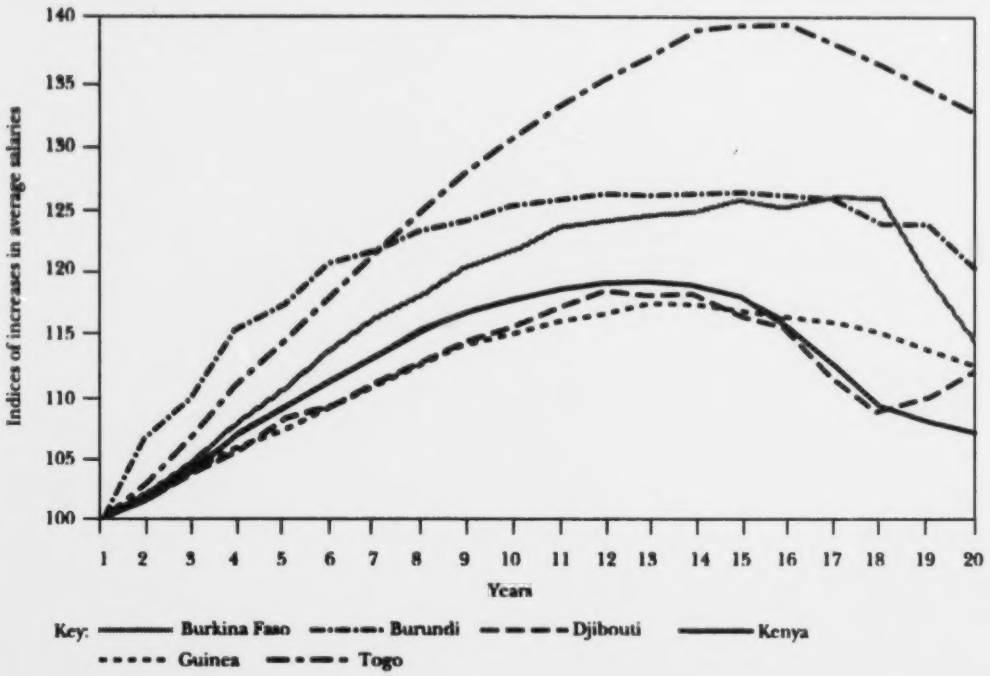
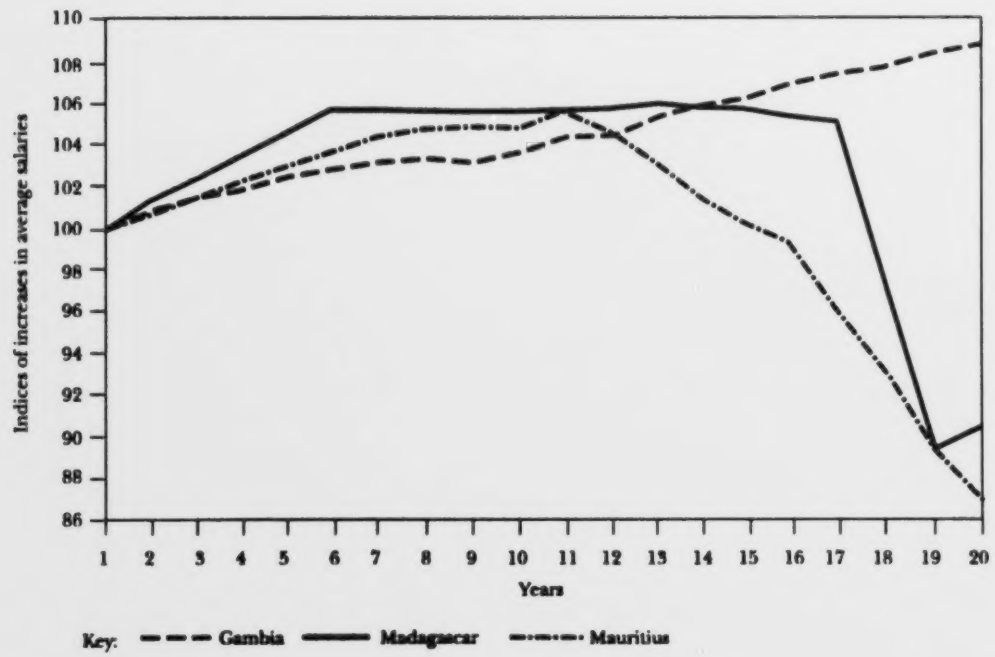


Figure 8-2d. Projected Average Salaries (under equilibrium) for The Gambia, Madagascar, and Mauritius



Conclusion

The forecasts of table 8.9 based on a growth rate of 3 percent of the teaching force—a mild assumption for most Sub-Saharan countries—show that the next ten years will be critical for primary schooling. Total teaching costs will grow at an average of over 4 percent. This is well above the expected real growth rate of governments' operational budgets for most Sub-Saharan African countries. The first reaction to this problem could be, as it was in the past, to try to reduce average salaries. A prevalent, though seldom explicit and mostly unintended, remedy for lowering average salaries is to allow salaries of teachers (and all other civil servants) to deteriorate with inflation.

If the share of teaching costs in the governments' budgets remains constant, and assuming constant tax rates, then:

$$g = r + i = s = d + n + a \qquad (1)$$

where g = rate of growth of the nominal government budget; r = real rate of growth of taxable base; i = rate of inflation; s = rate of growth of nominal teaching budget; d = upward drift in average salaries; n = rate of growth of the teaching force; and a = rate of adjustment to inflation.

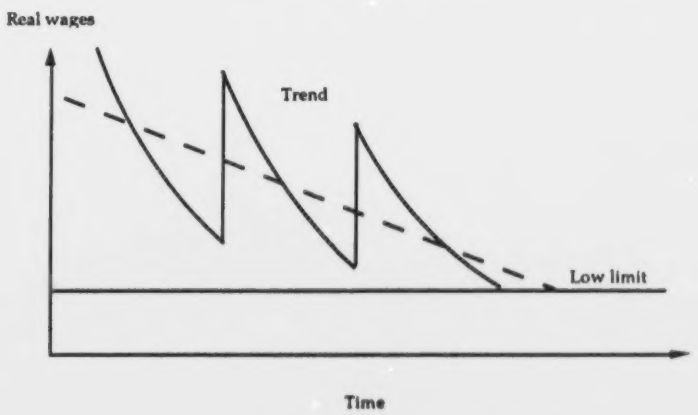
From equation (1),

$$n = r - d + (i - a) \qquad (2)$$

If salary scale parameters cannot be changed (d is fixed), n depends on r and (i-a), which measures the deterioration of salaries resulting from inflation (see table 8-7). This formulation helps explain how governments in Sub-Saharan Africa are able to maintain, or even increase, the number of teachers when the rate of economic growth falls below the rate of growth of the school-age population.

This process cannot go on indefinitely, however. When the accumulated deterioration (i-a) reaches a level that triggers political tensions, the government can temporarily raise real salaries either by limiting n (the rate of growth of teachers) or by borrowing. (This last measure would contribute to inflationary pressures in the future.) This process, when repeated many times, ends up producing a long-term run falling trend in real wages (figure 8-3).

Figure 8-3. Trend in Real Wages



When real wages reach the lowest acceptable limit in the standard of living, teachers will react by withholding efforts and by lowering attendance in school in order to raise their revenue per unit of effort and time, and perhaps increase their income by using the extra time for other endeavors. The result will certainly have dire consequences for the quality of teaching.

Maintenance, let alone increases, of enrollment rates in primary schooling at a satisfactory level of quality cannot rely on inflation as a long-run solution. Only a combined effect of changing salary scale characteristics and the distribution by category of teachers of new entrants to the teaching force, improvement of teacher productivity, and, especially, reallocation of budgets to favor primary schooling, can provide a feasible solution.

Recommendations

Sub-Saharan countries are trying to expand their primary school systems to make their proposed common goal of universal primary education a reality. This is an enormous and very expensive job at a time when budget constraints are putting a crimp on educational expenditures. The solution to this problem is threefold: (a) to increase resources for primary education, (b) to improve the efficiency of the educational process, and (c) to lower costs of teaching inputs while conserving a desirable level of educational quality. This study provides information and analyses useful for dealing with the third element of the solution. The following general recommendations for Sub-Saharan Africa, which are derived from the review presented earlier, suggest steps to facilitate planning of teacher salaries.

- In most countries, teachers' salary scales are part of the civil service grading system. To have greater flexibility in determining teachers' salary schedules, administrators would do well to delink teachers from other civil servants.
- Many Sub-Saharan African countries have significant proportions of unqualified and underqualified personnel in their teaching force. Any program to improve the quality of primary education in Sub-Saharan Africa must address this problem, but ways have to be found to mitigate the budgetary impact of upgrading these teachers.
- Institutional, more than economic, criteria are the norm for determining teachers' salaries today. We should, therefore, strive to adjust salary scales to economic conditions. Maximums, minimums, and rates of progression in the salary scale should be used to attract and then retain qualified teachers and, where possible, to minimize costs. This last objective could be achieved in conjunction with the other two because different combinations of training and experience can produce the same teaching proficiency.
- It is in the nature of salary scales that decisions today concerning characteristics of the scale have differing effects over time. The evaluation of options, then, requires good forecasting of teachers' salaries. This forecasting should be based on the parameters of the salary scale, initial distribution of teachers on the scale, attrition rates, retirement age, rate of growth of the system, and policies concerning the distribution among categories of entering teachers. A good teacher cost forecast should also include a forecast of fringe benefits and social security contributions, which can easily account for 25 to 30 percent of the salary bill. The number of recipients and amounts should be made explicit; something that is seldom done today.
- Decisions concerning the category mix of new entrants to the teaching force are usually predicated on the numbers of graduates from teacher training institutions who, in most countries, are guaranteed employment at graduation. To make the planning of teacher training more flexible, the guaranteed employment clause should be abolished.
- The search for correct solutions to problems concerning teacher salaries requires detailed and reliable data on teachers: type, age, attrition rates, salary scales, fringe benefits, and distribution of teachers by steps of the salary scales. These data are seldom available on a systematic basis even though they are required inputs for the preparation of a good budget proposal. The availability and low cost of present day computers makes the collection and analysis of these types of data an easy task. For the sake of good management, control, and planning, the collection of this type of data on a permanent and systematic basis should become a priority for all education ministries in Sub-Saharan Africa.

Other problems, such as the adequacy of teacher salaries to attract and retain good teachers and the desirability and feasibility of reducing teacher salaries to lower unit costs, must be analyzed and solved on a country by country basis. Simplistic observations, such as teachers' salaries as a percentage of gross national product per capita in Sub-Saharan Africa are too high compared with other regions and therefore have to be lowered, ignore not only economic and institutional factors involved in setting salaries, but also the possible adverse impact on teachers' productivity of lowering their salaries inordinately. Given that the relationship of salaries to the supply of teacher services in terms of quality and quantity varies from country to country, measures to affect and change this relationship must be tailored to local circumstances.

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9

Economic Incentives to Improve Teaching

Richard J. Murnane

Providing all students with effective teachers in all disciplines is a challenge that every country faces. This chapter explores the effectiveness of different types of salary differentials for meeting this challenge.

Most governments use some sort of uniform salary schedule to pay the teachers they employ. Often, there is one salary schedule for primary school teachers and a second (with higher compensation levels) for secondary school teachers. The critical characteristic of the uniform salary schedule is that a teacher's pay depends upon educational credentials and years of experience. It does not depend upon the quality of the teacher's performance, the subject being taught, the working conditions in the school, or the living conditions in the area.

Many countries adopted uniform salary schedules to make teaching more professional and to eliminate the favoritism and inequities that once influenced how much teachers earned. Uniform salary schedules, however, do contribute to three problems that jeopardize the goal of providing all students with effective teachers in all subjects:

- *Motivating Teachers.* Under a uniform salary schedule, teachers do not receive financial rewards for superior performance, nor are there financial penalties, short of dismissal, for inadequate performance.
- *Finding skilled teachers of mathematics and science.* A uniform salary scale whereby teachers trained in mathematics and chemistry are paid the same as teachers trained in the humanities often results either in a shortage of mathematics and chemistry teachers (because their salary options in business and industry are particularly attractive or because few post-secondary students study these technical subjects) or in teachers being trained in the humanities being paid more than is necessary to attract them. (Murnane and others 1991.)
- *Finding teachers to work in rural areas.* Most teachers prefer to work in cities or close to cities. In many countries, there is a surplus of qualified applicants for teaching positions in cities and a scarcity of applicants willing to work in rural areas (Ankrah-Dove 1982; Klitgaard and others 1985).

What policy options would address these problems? Many economists would suggest the following strategies:

- Use *merit pay* to motivate teachers. A significant portion of a teacher's salary should be based on performance, as assessed by supervisors.
- Pay *salary premiums* to mathematics and science teachers.
- Pay *location premiums* to teachers working in rural areas.

All these options have in common the payment of premiums to solve problems of educational scarcity: scarcity of superior performance, scarcity of mathematics and science teachers, and scarcity of teachers in rural areas. A strength of the economic perspective that underlies these proposals is the recognition that teachers respond to incentives and the policy challenge can be framed in terms of getting the incentives right. In other words, this perspective embraces the reality that policymakers sometimes forget: They can make policy, but they cannot dictate outcomes. Outcomes will depend on the responses to the policies.

While I want to emphasize the value of the economist's perspective in analyzing these three policy problems, I also want to argue that the three proposed strategies may be flawed in that they may elicit responses very different from the predicted ones. The flaws stem from lack of attention to the nature of schools. In other words, the payment of premiums may elicit responses from teachers that make schools less, not more, effective in enhancing student achievement.

Desirable Teacher Behaviors

A great deal has been written about the characteristics of effective schools, and a variety of different variables have been emphasized. However, I believe that all analysts would agree that for a school to be effective, teachers must work hard, work together, and continue to work hard and work together for over a period of several years. The need for continued high effort and cooperation may seem obvious to anyone who has spent time in schools, but it is critical to ask whether particular policy proposals increase incentives for long-term high effort and cooperation or reduce incentives for these desirable behaviors.

Unfortunately, it is both difficult and expensive to monitor the performance of classroom teachers to discover whether they are consistently engaging in behavior that administrators view as desirable. Test scores provide at best a very rough measure because the scores depend so much on the attributes that the students bring to school. Teaching is not like factory production; effectiveness does not consist of carrying out a set of prescribed activities. As a result, supervisors cannot monitor teachers' performance by checking whether they carry out a set of activities as though they were factory workers.

I do not mean to imply that supervisors cannot make reasonably accurate assessments about the performance of individual teachers; there is some evidence that talented supervisors can do this (Armor and others 1976; Murnane 1975). I do mean, however, that supervisors cannot justify these assessments by pointing to particular behaviors in which some teachers scored high while others did not. Why does this matter? The reason can best be explained by examining teachers' responses to merit pay and other incentive policies.

Responses

Responses to Merit Pay

Merit pay has a long history as a policy solution to the problem of motivating teachers (Murnane and Cohen 1986). The most common form of merit pay is for salary premiums to be based on supervisors' assessments of individual teacher performances. The hope is that merit pay will encourage teachers to work harder. However, other responses are possible. These include teachers trying to get merit pay by lobbying for the most able students, hoarding teaching materials so that other teachers do not appear effective, and spreading rumors about other teachers' deficiencies. Such responses may enable a teacher to appear more productive in the eyes of a supervisor, but they are harmful when it comes to educating students. Thus, two questions that arise immediately on examining the responses to merit pay (and of other similar policies) are:

- Will the responses of the teachers who receive merit pay enhance the effectiveness of the school?
- Will the responses of teachers who are not awarded merit pay enhance the effectiveness of the school?

Evidence suggests that many teachers who do not receive merit pay respond not by trying harder in the hope of subsequently doing so, but rather by reducing their effort and willingness to cooperate with other teachers. This response generally stems from their perception that they have been treated unfairly, that they have been doing as good a job as the teachers who did receive merit pay, and that the supervisors' judgment was the result of incompetence or favoritism. It is extremely difficult for supervisors to alter this perception because the nature of teaching makes it extremely difficult for supervisors to provide a convincing answer to the question: why did Teacher X get merit pay and not I?

One final question that needs to be addressed in analyzing particular policy proposals is will the long-term responses to the policy be different from the short-term responses?

This question is important, because for schools to be effective, teachers and administrators must work together for an extended time. Advocates of merit pay sometimes forget that each year's merit pay review is not independent from the previous year's. As most teachers look to this year's review and evaluate what they consider to be a fair rating, the minimum acceptable rating is the rating they were given the previous year. These rising expectations create a dilemma for administrators responsible for merit pay, who may respond by increasing ratings each year. Such a practice, quite common in places where merit pay has lasted for several years, eventually subverts the purpose of merit pay by moving all teachers to the top of the merit scale. An alternative is for administrators to downgrade some teachers who they believe have not done as good a job as they did in the previous year. In the research that Murnane and Cohen (1986) conducted on merit pay, many school administrators reported that they stopped downgrading teachers because rather than eliciting higher effort in the subsequent year, this practice resulted in bitterness, lack of cooperation, and lowered morale, all of which reduced the schools' effectiveness.

In general, then, in designing strategies to deal with particular policy problems, it is extremely important to keep in mind desirable teacher behaviors and to consider carefully the range of responses that a particular policy may evoke.

Responses to Payment of Premiums for Mathematics and Science Teachers

When paying salary premiums to mathematics and science teachers, one needs to consider the responses of other teachers who work just as hard in the same schools, teach the same students, and work just as long hours. Their responses are likely to be similar to those denied merit pay: anger, frustration, bitterness, and reluctance to cooperate with their more favored colleagues. Beyond anecdotes, there is little real evidence to evaluate how serious these responses from the nontarget group teachers are. Moreover, it is likely that evidence from places where pay premiums were tried would show that the responses depended critically on the way the program was implemented, for example, on whether teacher unions participated in the design and on whether nontarget group teachers were given opportunities to acquire the qualifications needed for the salary premiums. The important point here is that treating people who work together differently can elicit responses that jeopardize the education provided to students.

Responses to Pay Premiums for Teachers Working in Rural Areas

The policy of paying salary premiums to teachers willing to work in locations where it has proved difficult to attract staff is different in an important sense from either merit pay or the payment of premiums for mathematics and science teachers. The key difference is that all teachers working in the same rural school would receive the salary premium. Thus, the

troubling problem of dysfunctional responses from teachers who did not receive the premium will not arise.

The limited evidence on this topic (Ankrah-Dove 1982) suggests, however, that a simple announcement of modest pay premiums (where modest is defined to be premiums consistent with the severe resource shortage most developing countries face) will not attract teachers from urban to rural areas. Many teachers prefer unemployment or underemployment in the city to a teaching position in a rural area. Reasons include language differences, cultural differences, and lack of amenities (Klitgaard and others 1985).

One might argue that the pay premiums are evidently not high enough, but I am skeptical of this argument. While it is probably true that there is some level of premium that would induce teachers in cities to accept, at least temporarily, teaching jobs in rural areas, I wonder what kind of job they would do. If teachers were to feel alienated and unhappy, I doubt that they would engage in the high effort and cooperation needed for effective schooling.

Tailoring Incentives to Desired Responses

While it is not difficult to pick holes in the three proposals based on the payment of premiums, the problems remain. Are there alternative policies more conducive to encouraging teachers to higher performance and greater cooperation? Clearly, there are no proposals that will work in all settings. The effectiveness of any proposal will depend on how it is adapted to the specific setting and on how it is implemented.

What I want to suggest, therefore, are some promising strategies for dealing with the three difficult policy problems. These strategies are designed to evoke desirable responses from teachers.

Small-Grant Programs

A strategy with an attractive track record is a program that provides small grants to classroom teachers to pursue innovative teaching projects in their classrooms (McDonnell and McLaughlin 1980). Teachers apply for the grants by writing short proposals describing their ideas and how they would use the grant money. The proposals are reviewed by a committee of teachers and administrators. The rules can specify either that any good proposal will be funded or that proposals must focus on certain priorities, for example, increasing literacy. Thus, the programs can be tailored either to national or to local goals. Teachers whose proposals are judged to be acceptable receive an award (typically in the range of 5 percent of the teacher's salary) to be used in their teaching program, and these teachers are publicly recognized. Evaluations of such programs in the United States indicate that they have raised the morale of energetic teachers and have resulted in a variety of innovative projects.

There are significant differences between the small-grant programs and merit pay. First, teachers know specifically what they must do to obtain a grant: write a proposal that defines clearly their program ideas and how the grant money would contribute to the program. This is in contrast to the frustration felt by many teachers who do not receive merit pay and are not given a satisfactory explanation about what they should do to obtain it. Second, the program provides energetic teachers with recognition; something all too rare in many schools. This is in contrast to typical merit pay programs where recipients are urged not to discuss their awards with colleagues (Murnane and Cohen 1986). Third, the award money is used to promote instruction; it is not simply a salary bonus.

Differential Training Costs

The World Bank's policy paper, *Financing Education in Developing Countries* (1986), suggests that students be charged for a significant part of their post-secondary education. The argument is that the widespread practice of providing higher education at no cost to students

tends to subsidize the most affluent members of society and drains the education budget of resources that could be used to expand the quantity and improve the quality of school education.

A cost-recovery policy for higher education creates the potential of tailoring fees to perceived human resource needs. For example, students who train to become science and mathematics teachers could receive loans repayable through service as teachers, with institutional mechanisms to collect loan payments from students who choose not to teach.

There is a key difference between the policy of forgivable loans and the policy of salary premiums for mathematics and science teachers. The loan program has the advantage of creating a price differential at the point when decisions may be most sensitive to cost differences. It avoids salary differentials among teachers who work together and who are often keenly sensitive about equity issues.

Recruiting Potential Teachers from Rural Areas

A central challenge in providing universal primary education is to recruit teachers willing to work (and work hard) in rural areas. A strategy that has had some success is recruiting energetic young people from rural areas, training them as teachers (with as little training time as possible spent in cities), and then encouraging them to return as teachers to the rural areas where they grew up. Since these new teacher trainees share the language and culture of the area, they are likely to be accepted by the area's residents, and indeed, the potential exists for them to assume positions of leadership in their communities.

This policy suggestion need not be mutually exclusive from that of paying premiums to teachers who work in rural areas. There are, however, differences between the policy emphases. One key difference is that the recruitment policy explicitly recognizes that, as a result of inadequate information and/or inadequate resources, talented young people from rural areas are unlikely to find their way to teacher training programs without an active recruitment effort. A second difference is that the recruitment policy explicitly recognizes the importance of helping new trainees to find teaching positions in the rural area where they grew up.

Summary

I conclude by reiterating three themes. First is the fundamental point that while policymakers can institute policies, they cannot dictate outcomes. The outcomes will depend on responses to the policies.

Second, in assessing responses to policies aimed at changing the behavior of teachers, it is critical to be sensitive to the range of responses that a particular policy may elicit. The issue is much more than a question of how large the response will be. It concerns the nature of the response.

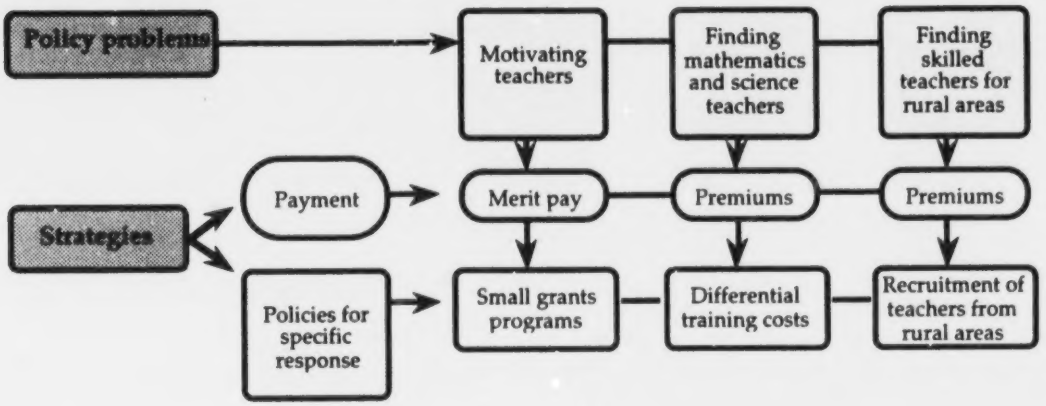
Third, in evaluating likely responses, it is imperative to keep in mind that effective schools are places where teachers, administrators, and students work hard and cooperate with each other. Policies that discourage cooperation are ill advised. Furthermore, because it is extremely difficult to monitor teachers' actions effectively, dysfunctional responses to ill-advised policies are difficult to detect, and even more difficult to prevent. Moreover, if morale problems are created, they are often hard to eliminate, and morale problems tend to hamper the effectiveness of teachers in fostering student learning. Consequently, in evaluating potential strategies for dealing with particular policy problems, it is important to ask whether they facilitate the high effort and cooperation that characterize effective schools.

Discussion

Following the presentation of this paper at the World Bank seminar, participants discussed the three policy problems and alternative strategies for dealing with them as summarized in figure 9-1. Most of the lively ninety-minute discussion focused on problems of staffing rural

schools with skilled teachers, which is clearly critical for all the countries represented in the seminar.

Figure 9-1. Policy Problems and Suggested Strategies



Staffing Schools in Rural Areas

Many participants argued that the key problem was the quality of life in rural areas. The payment of premiums is not an effective inducement when rural villages lack piped water, electricity, shopping facilities, and adequate housing. Other concerns were marriage prospects for single teachers and the quality of education available to the children of married teachers.

The participants had had varied experiences trying to staff rural schools. Several had found that mandatory assignment of teachers to rural schools led to dysfunctional responses: high absentee rates or misbehavior intended to bring about termination or reassignment. Another participant stated that his country had succeeded in staffing rural schools by assigning new teachers to these schools, with the promise that they would be reassigned to more desirable locations after two or three years' service. As he pointed out, however, this assignment practice led to the least experienced teachers taking on the most difficult jobs. Another participant stated that his country had had some success in placing husband and wife teams in rural schools and encouraging them to stay by offering their children preferential access to high-quality boarding schools.

One participant emphasized the value of appealing to patriotic service in recruiting teachers. Another suggested that missionary societies were often a source of teachers for schools in the most primitive areas. Other participants argued that as their societies modernized, it was increasingly difficult to rely on either patriotism or missionaries to staff rural schools.

There was a great deal of discussion about the value of placing teacher training facilities in rural areas, making it easier both to recruit rural youth and to distance the lure of urban life for graduates. Several participants reported that this strategy had been quite effective in their countries. Others argued that care had to be taken to avoid making the lifestyle at the rural training facilities similar to that in the cities; instead, the programs should concentrate on training potential teachers to work in primitive areas. Still others argued that it had proven difficult to attract students, especially academically able students, to rural teacher training facilities, perhaps because they were not like urban facilities.

The participants generally agreed that it is extraordinarily difficult to staff rural schools with effective teachers wherever living conditions in rural areas are less attractive than

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living conditions in cities. The inference that many participants drew from this discussion was the importance of relating teacher recruitment efforts to rural development efforts.

Finding Skilled Mathematics and Science Teachers

There was only limited discussion about recruiting and retaining mathematics and science teachers. Several participants pointed out that unlike the situation in some industrialized countries, their agriculturally-based economies provided few employment opportunities for individuals with science and mathematics training, hence the problem was that only a small proportion of post-secondary school students chose to study mathematics or chemistry, although a larger number studied biology.

Motivating Teachers

There seemed to be widespread agreement that merit pay in the developing countries would be no more effective in motivating teachers than it had been in the industrialized countries. One participant did describe a new policy in his country of making awards to outstanding teachers each year at the local, regional, and national levels. Further discussion, however, revealed that no more than 2 percent of the nation's teachers would receive awards in any year, and consequently the policy might better be viewed as increasing the visibility of the teaching profession than altering the behavior of the nation's classroom teachers.

Several participants seemed interested in the potential of small grant programs to motivate teachers. They agreed that this type of program was more likely than merit pay to elicit productive responses from teachers. On the negative side, however, a well-designed small grants program would require a modest increase in expenditure to bring about an increase in teacher effort, and in fiscally strapped governments, it was often difficult to find the resources to implement this type of efficiency gain. Instead, there was pressure to find ways of improving efficiency by reducing expenditures while holding performance constant.

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10

The Role of Local Communities in Teacher Incentive Systems

Frances N. Kemmerer and Sivasailam Thiagarajan

Nations at every level of development are discussing teaching incentives and are profoundly concerned with the quality of schooling and, in particular, the quality of teaching. In many countries, evidence suggests that student achievement has declined, as has the academic ability of those entering the teaching profession. Although the causes differ from country to country, the net effects are similar. Systems are experiencing difficulty in recruiting and retaining high caliber teachers. In developing nations where school systems are still expanding, communications are difficult, finances are limited, and the problems of identifying and funding appropriate teacher incentives are much worse than in countries where resources are more abundant.

Performance: The Goal of Teacher Incentive Systems

The goal of teacher incentive systems is to improve teacher performance. The hazard lies in reducing that goal to one or more subgoals, such as recruiting higher quality individuals into teaching or retaining experienced teachers in the system. Such reductionism is especially hazardous where responsibility for teachers is divided among units within a ministry or among ministries. Discrete treatment of subgoals generally leads to overall inconsistency in the system. By contrast, integration of recruitment and retention subgoals into a long-term plan for improving teacher effectiveness produces a more flexible and efficient system.

One advantage of emphasizing overall teacher effectiveness is that it broadens the debate beyond the narrow interests of particular units responsible for one or other aspect of teacher service. This, in turn, may generate greater support within the ministry or across ministries to strengthen teaching incentives. A second and more significant advantage is that each incentive can be evaluated for its contribution over time to improving teacher performance, with respect to recruitment, retention, and teacher performance and the options available for improvements in each aspect.

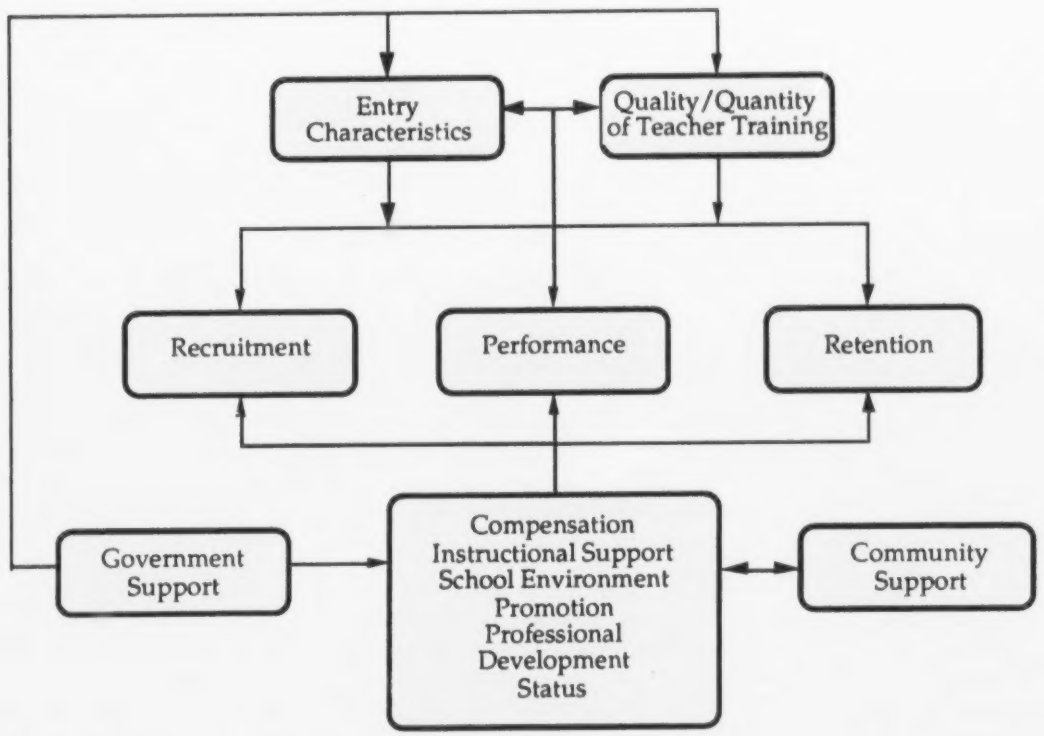
Adequate teacher performance embraces a range of behaviors, from regular attendance at school to classroom management, lesson delivery, lesson design, and student evaluation and guidance. Outside the classroom, teachers are typically expected to participate in school-level decisionmaking, cooperate with each other, and meet with parents. Literature on teacher effectiveness (Kemmerer and Thiagarajan 1986) suggests that teachers' willingness and ability to carry out their responsibilities effectively are influenced by the following:

- entry characteristics (academic ability, the quantity and quality of their prior schooling);
- teacher training;
- compensation package;
- the nature and availability of instructional support (texts, materials, and supervision);

- opportunities for promotion and advancement;
- school environment (colleagues, students, management structure, and facilities);
- status in the community.

Figure 10-1, which shows the relationships between these factors and teacher performance, suggests that there is some correspondence between the factors that affect performance and those that affect the subgoals of recruitment and retention. Teaching is one of the few professions with which most of the public is familiar. Those who have gone to school know the status of teachers in the community, the salaries of teachers, and their working conditions. This knowledge, coupled with their own experiences in school, largely determines their perception of teaching as an attractive occupation. The status of the school system thus influences the ability to recruit new teachers. In addition, there is considerable research suggesting that the individual's perception of his or her first teaching assignment (school environment, opportunities for promotion and professional development, status in the community, and instructional support), as well as a sense of success, determine whether they decide to remain in the teaching profession.

Figure 10-1. Teacher Incentive Model



Government-Community Partnerships

In many developing nations, providing incentives for teacher recruitment, retention, and performance has been, until recently, the responsibility of central and regional government. Growing fiscal constraints, however, have led many governments to tolerate, if not encourage, local involvement. This can have distinct advantages. First and foremost, communities control resources that are not available to the central government. For instance, communities can

provide housing and opportunities for out-of-school employment. Second, shared responsibility generates a level of community involvement that is otherwise difficult to attain. For example, in many rural villages in developing countries, parents withhold their children from school because they perceive it negatively. They view schools as a service to be made use of only when they want it, and not as an integral part of the community. Third, the community is able to respond more quickly and more directly to problems (for example, teacher attendance) that affect school quality. If responsibility for schools is shared with communities, difficulties that now take months (and sometimes years) to resolve can be dealt with promptly.

Concerns that local administration of teacher incentives may result in compounding already demonstrable urban/rural differences are justifiable, but not irremediable. These concerns simply underscore the importance of shared responsibility. There will always be differences among communities in living conditions and levels of services that affect their power to attract and to retain teachers. These differences can be addressed only by the more powerful incentives available to government (for example, special allowances for teaching in remote areas or choice in the location of the next assignment). At the same time, communities are in a better position to provide incentives related to day-to-day performance.

Local-Level Incentives

The types of teacher incentives best implemented at local levels (based on the available research, work done by the Improving Efficiency of Educational Systems project, and discussions with participants at the Economic Development Institute Seminar on Teacher Incentives) are listed in figure 10-2. Not all the items are appropriate for different countries or for different communities within the same country. Choice of the most effective incentives for a given community depends on detailed information about factors affecting teacher recruitment, retention, and performance, as shown in figure 10-3. While the research to describe the current status of teachers will be carried out most easily at the central level, the findings can be summarized and made available to school/community organizations. Information on government incentives and those provided by other jurisdictions permit a community to select those that are consonant with its own financial resources and with teacher needs and preferences.

Conclusions

Few countries have well-articulated central, regional, and local teacher incentive systems. Government incentives tend to focus on recruitment or retention rather than performance. While little research has been done on local incentives, anecdotal evidence suggests that provision of such incentives is sporadic. Communities often lack the formal authority or the information to select incentives that reinforce those of government. Where communities have been asked to share the responsibility for schools with government, the government has rarely taken the further step of adjusting its own incentive structure to allow for the differences among communities. The growing fiscal constraints in many developing countries, coupled with the obvious need for community involvement in schools, indicate that shared responsibility for school enhancement through creating an integrated teaching incentive scheme is long overdue.

Figure 10-2. Local-Level Incentives for Teacher Performance

Recruitment

- Hire one or more extra primary teachers from local funds to supplement primary teachers hired and paid by the ministry of education.
- Provide special allowances to primary teachers from community funds.
- Take care of the families when primary teachers die.
- Provide a one-time bonus for recruiting excellent primary teachers for your community.
- Monitor the hiring practices of the school authorities. Ensure that competent primary teachers who are likely to stay in the teaching job are hired.
- Provide scholarships (from local funds) to primary teachers' children.
- Allocate local-government jobs as part-time jobs to primary teachers.
- Ask educational authorities for more primary teachers if the classrooms become crowded.
- Top up the salary of deserving primary teachers using local funds.
- Help with medical expenses of primary teachers in time of need.
- Take care of primary teachers when they have medical problems
- Collect local funds to recruit primary teachers with more education, training, and experience.
- Permit primary teachers to use the school premises for evening classes.
- Lobby for increased teacher salaries and better working conditions.
- Build more classrooms.
- Provide free housing for primary teachers coming from other regions.
- Negotiate with primary teachers for additional benefits they want from the community in return for additional services the community expects from them.
- Employ primary teachers in adult education programs.
- Encourage ex-primary teachers to return to their profession. Encourage them to be at least part-time primary teachers.
- Hire part-time primary teachers using local funds.
- Ensure that new primary teachers from other areas are welcomed.
- Write to ministry of education authorities for providing primary teachers with appropriate allowances.

Teacher Retention

- Provide an extra allowance from local funds for primary teachers with large families
- Improve the school building by collecting money or by volunteering labor.
- Donate a plot of land for use by primary teachers.
- Donate buildings to the primary school.
- Donate land to the primary school.
- Provide cheap rental housing for primary teachers.
- Build and maintain a cafeteria where primary teachers can purchase inexpensive food.
- Help primary school authorities redesign the job of the primary teachers by identifying and eliminating unnecessary, meaningless, and dull activities.
- Make sure that teacher salaries are paid on time by complaining to governmental authorities.
- Provide housing to the primary teachers in the school compound or very near the school.

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- Encourage primary teachers to continue in their profession by talking to them about the importance of their work near the end of each school year.
- Supply free groceries and vegetables for primary teachers and their families.
- Collect a local tuition fee from parents who can afford it to provide additional funds for primary teacher incentives.
- Encourage principals to provide primary teachers with a greater role in the management of the school.
- Have different families adopt a primary teacher for a month and provide him or her with food.
- Encourage students to be more respectful toward their primary teachers.
- Ensure that primary teachers have a high status in the community by being invited to all important functions and meetings.
- Have a special meeting to thank primary teachers on the anniversary dates of their appointments.
- Whenever VIPs come visiting, take them to the primary school and introduce them to outstanding teachers.
- Find suitable part-time jobs for primary teachers that will not interfere with their teaching.
- Ensure that all children are enrolled in the primary school to reassure teachers of job security.
- Support local primary teachers by periodically petitioning the ministry of education authorities for improved primary school conditions and teacher incentives.
- Organize a local cooperative store and employ primary teachers part-time. Use the profits to create a teacher incentives fund.
- In talking to primary teachers, emphasize what an important job they are doing.
- Celebrate a special Primary Teachers' Week every year.
- Provide additional salary increases (from local donations) to reward primary teachers for serving many years of service.
- Establish a cooperative store for primary teachers.
- Appoint a steering committee to work with the principals and the primary school staff to provide suitable teacher incentives.
- Support teachers by speaking on their behalf to visiting government officials.
- Provide free lunch for primary teachers as a part of the feeding program for children.
- Monitor work assignments to ensure that no primary teacher is treated unfairly.
- Set up a community grievance committee to investigate complaints from primary teachers.
- Introduce new primary teachers to prominent local citizens and village elders.
- Have a local committee periodically ask primary teachers about their working conditions and help improve them.
- Celebrate a special Primary Teachers' Day every year.
- Make sure that primary teachers are not dismissed unfairly.
- Provide low-interest loans for primary teachers in need.
- Provide a greater role for the primary teachers in the local government.
- Encourage the school administration to share information about the school with primary teachers.
- Help settle conflicts among primary teachers, between the primary teachers and the principal, or between the primary teachers and the community.
- Encourage community members and parents to talk to primary teachers frequently, expressing thanks for their efforts.
- Help look after the needs of primary teachers' families.
- Make sure that talented students attend the local primary schools.
- Help primary teachers cultivate a family farm.
- Build a suitable teachers' room in the primary school.
- Donate an orchard or a fruit tree grove so that the earnings can be distributed among deserving primary teachers.
- Purchase or repair primary classroom furniture.
- If teacher salaries are delayed, help investigate the delay (to prevent primary teachers from neglecting their classrooms while chasing after their paychecks).

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- Invite primary teachers to family and community functions such as weddings and funerals.
- Encourage educational authorities to modify the primary school calendar to suit the needs of the teacher.
- Provide transportation to primary teachers for their trips to their homes once a year.
- Encourage primary teachers to suggest methods for improving their classroom conditions. Provide funds or voluntary labor to carry out appropriate projects.
- Encourage primary teachers to work cooperatively with each other.
- If teacher salaries are delayed, advance the money until the payment arrives.
- Establish a high-level local committee to study and improve teacher incentive systems.
- Encourage local politicians to recognize the importance of primary teachers.

Teacher Performance

- Encourage the principals to set up different levels of primary teachers.

  Work with ministry of education and regional educational authorities to provide more inservice training to local primary teachers.
- Collect donations to reward retiring primary teachers.

  Collect funds to purchase instructional aids for the primary classrooms.
- Collect local funds to reward outstanding primary teachers with a bonus at the end of the year.
- Provide funds for primary teachers to attend professional meetings and conferences.
- Encourage community leaders to visit classrooms and to provide praise and guidance to primary teachers.
- Encourage parents to help primary teachers by supervising their children's homework.
- Collect funds to pay primary teachers to conduct special classes for slower children after school hours.
- Encourage parents to visit the school periodically to observe primary teachers in action. Praise or scold primary teachers as needed.
- Set up a local Steering Committee to monitor teacher performance and to reward or reprimand teachers as needed.
- Encourage parents to send their children regularly to the primary school.
- Support primary teachers by bringing local pressure on ministry of education to remove unnecessary rules and regulations.
- Use local leaders to address primary teachers' meetings frequently to inspire and to encourage them to work more conscientiously.
- Encourage principals to visit the classrooms frequently to observe the primary teachers in action.
- Bring pressure on the school authorities to fire underserving and incompetent primary teachers.
- Encourage the community to participate in their children's education by teaching special classes in local arts and crafts.
- Give local community steering committees greater authority in hiring and firing primary teachers.
- Help the teacher in the classroom by working as volunteer teacher aides.
- If the classrooms are overcrowded, hire part-time teachers using local funds to relieve the pressure on primary teachers.
- Encourage primary teachers to enroll in distance education classes by providing cash incentives.
- Send information to local, district, and regional educational officers about the exemplary performance of local primary teachers.
- Complain about delays in the distribution of textbooks to ministry of education authorities.
- Whenever student performance is inadequate, complain to the primary teachers, principals, and educational authorities.

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- Discourage primary teachers from participating in political activities if such activities are found to interfere with their responsibilities.
- Publicize outstanding work by primary teachers in local newspapers and radio broadcasts.
- Collect donations to send *deserving primary* teachers for higher education. Ensure they will return to their schools.
- Prevent primary teachers from obtaining other part-time jobs that may interfere with their teaching responsibilities.
- Provide primary teachers with classroom kits of instructional aids and materials.
- Encourage principals to review the performance of each teacher every year.
- Encourage principals to observe different primary teachers and to provide them with necessary guidance.
- Enter into an informal contract with the entire primary school staff for a bonus based on student performance on national examinations.
- Pressure the school authorities to reprimand or punish primary teachers for being absent or for not carrying out their duties.
- Provide sufficient amount of chalk and other classroom supplies.
- Whenever some student performs in an outstanding fashion, be sure to congratulate his or her teacher.
- Encourage the educational authorities to modify the daily primary school schedules to suit the needs of the primary teachers.
- Establish a parent-teacher association to help primary teachers.
- Encourage dropouts to return to primary school and encourage their parents to monitor their study habits.
- Help primary teachers to write and publish their own workbooks and lessons.
- Explore alternative approaches to help primary teachers in overcrowded classrooms.
- Collect funds to provide a special bonus to primary teachers for regular attendance.
- Encourage local secondary school teachers to conduct evening classes for primary teachers.
- Have a local steering committee evaluate the performance of each teacher at the end of each school year.
- Encourage local experts to teach part-time on a voluntary basis.
- Give an annual award for the most outstanding teacher.
- Buy textbooks and reference books for use by teachers.
- Encourage all members of the community—including students and parents—to praise primary teachers whenever they perform a good job.
- Complain about absent primary teachers to the principal, primary school authorities, and to primary teachers themselves.
- Encourage untrained primary teachers to get trained and return to the primary school by providing them with financial assistance.
- Improve classroom conditions (lighting, ventilation, etc.) by donating money or by volunteering labor.
- Make sure that all students have textbooks, notebooks, and pencils.
- Employ primary teachers to provide additional tutoring to children after school hours.
- Encourage school inspectors to visit the classrooms periodically and to provide feedback to primary teachers.
- Complain about school inspectors to the ministry of education authorities if they do not carry out their responsibilities.
- Encourage parents to help primary teachers maintain discipline among students.
- Complain to local, district, and regional educational officers about inadequate performance of local primary teachers.

Figure 10-3. Questions Related to Factors Affecting Teacher Incentives

1 Current Status

- What are the characteristics of currently serving teachers (educational attainment, age, gender, marital status, national origin, part-time/full-time, etc.)?
- How many teachers are actively teaching and how much do they get paid?
- How much could be saved by removing non-active teachers from the payroll?

2 Recruitment for Teacher Training

- What is the teacher turnover rate (national, regional, district)?
- What are the opportunity costs for primary teaching for each level of educational attainment of recruits and different types of teachers?
- What are the per student costs of teacher training?
- How many years of teacher service are required to realize a return on investments in training?
- Is teacher training considered an incentive for entering the teaching service?
- Are there alternative forms of training that might be less costly (e.g., a concentration in primary education at the secondary level or programmed teaching)?
- How closely does the teacher training curriculum relate to the realities of primary school teaching?
- What are the dropout and graduation rates in teacher training institutions?
- What proportion of those who graduate actively serve as teachers?

3 Teacher Retention and Attendance

- How are teachers assigned to schools?
- What length of time is the usual period of assignment?
- How long does the average person remain in primary school teaching?
- What factors influence teacher persistence and exit?
- How regularly do teachers attend school?
- What factors encourage high attendance rates?
- How do rates of teacher attendance vary with teacher characteristics, region, type of school (complete/incomplete), or location of school (urban/rural remote)?

4 Teacher Income

- What strategies do teachers use to supplement their income?
- How do these strategies differ according to the location of the school and the gender of the teacher?
- Which supplementary income strategies are officially sanctioned?
- What are the effects of secondary employment on teachers' effectiveness in the classroom?
- What types of secondary employment are complementary to teaching?
- What are the possibilities for government employment of teachers in second jobs (i.e., work at the ministry of education, work in the village as an adult education specialist)?

5 School Income Generation Activities

- What are the current sources of income for primary schools (e.g., government aid, private contributions, tuition, fees)?
- What school income generation activities are appropriate for different regions?
- What strategies have been tried in which locations with what results?
- What alternative approaches are available for distributing additional income among teachers?
- What are the advantages and disadvantages of alternative income sharing approaches?

6 Perceptions of Incentives

- What do teachers, former teachers, teacher trainees, administrators, educators, and the public perceive as incentives and disincentives for the recruitment, retention, and performance of teachers?

7 Remote Area Teaching

- What are the incentives and disincentives for teaching in remote areas?
- What are alternative strategies for increasing incentives and/or decreasing the disincentives?
- What are the likely costs and benefits of these alternative strategies?

8 What is the Extent of Current Community Support for Teachers' Food and Housing?

- What types of teacher incentives are best provided by parents and the community?
- How should the government formalize community participation in the support of schools?

9 Evaluation and Feedback Systems

- What types of formal evaluation of teaching performance are undertaken?
- What is the relationship between formal evaluation of performance and tenure, promotion, and salary increases?
- What types of formal and informal feedback do teachers receive from principals, inspectors, students, parents, and community leaders?
- What is the effect of recognition, indifference, and/or criticism on teacher performance and morale?
- What formal mechanisms can be used to increase the frequency of feedback and to make it more objective?

10 Instructional Support

- Do teachers perceive instructional materials as an incentive?
- What are the relative incentive values of textbooks for students, teachers' guides, programmed teaching modules, and teaching aids?
- What are the costs of these materials?
- How can their lives be extended and their costs be (at least partially) recovered?
- What is the relationship between the availability of instructional materials and teacher attendance?

11 Teacher Status

- What is the public perception of the status of primary school teachers?
- What is the effect of such perception on the morale of teachers?
- How can the status of teachers be enhanced?

12 Opportunities for Professional Development and Promotion

- What types of in-service training programs are available for the professional development of teachers?
- Are in-service training activities perceived by teachers as incentives?
- What opportunities for promotion currently exist?

13 School Characteristics and Job Satisfaction

- Do the characteristics of schools (e.g., size, enrollment, location, complete/incomplete cycle) affect teachers' job satisfaction?
- How are classrooms, students, and workloads assigned to teachers?
- Do teachers perceive workloads as being distributed equitably?
- To what extent do teachers participate in the school management and administration?

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Part III:

TRAINING AND MANAGING TEACHERS

Part III suggests ways in which organization, management, and training can contribute to teacher effectiveness. How should optimal tradeoffs between general and specialized teacher education be established? How much should be invested in pre-service, in-service, and on-the-job training? Different analysts propose different, but not mutually exclusive, views on these issues.

Connelly (chapter 11) reviews relevant literature on teacher effectiveness and argues that sound criteria for entry of teachers into the profession will yield greater educational dividends than time consuming, labor-intensive evaluations of samples of actual teacher performance. Connelly asserts that ratings of teacher behavior in classroom processes cannot be related to student achievement because of the lack of objectivity involved with teacher evaluation. Policymakers should instead give priority to teacher education, both pre-service and in-service. Supervised reflective practice is one way to encourage teacher education. This view is shared by other authors in the book who approach effectiveness from different perspectives.

Avalos (chapter 12) gives a detailed critique of traditional teacher training attempts, which have emphasized and become bogged down in finding a correlation between teacher behavior and student outcomes, determining desirable teacher characteristics, and determining the best methodology for teacher training. Her main conclusion is that efforts to foster effectiveness would be more productive if a teacher's awareness and reflection were used as the starting point of training efforts. Teachers should be the originators of and active participants in the design and implementation of teacher training activities. Research into evaluating training schemes should come close to the case study approach. It should be less traditional and pay more attention to pinning down contemporary facts, gaining insight into contemporary relationships, and realigning the culture's view of man with present realities.

Shaeffer (chapter 13) illustrates the kind of alternatives mentioned by Avalos. Shaeffer reviews teacher training alternatives and criticizes those methodologies that treat the trainee as an empty vessel; a passive recipient of new content and methods. Shaeffer advocates instead a methodology that requires trainees to play an active role in the training process, participating in decisions, solving problems, and determining the skills and knowledge to be transmitted. Teachers who learn to be actively in control of their own learning become empowered, self-confident, self-reliant: more active agents of change. Shaeffer discusses four main approaches to achieve the objectives of participatory teacher training: cooperative learning aimed at curriculum development, reflective self-instruction, training by simulation and situation, and the teacher as researcher. Although participatory training methods are time consuming, labor-intensive, and often in conflict with political, bureaucratic, and cultural circumstances, Shaeffer suggests that they are still more effective than conventional approaches.

No policies will ever be implemented without the full participation of teachers. The nature, rules, and dynamics of such participation varies in each country. Two examples are

illustrated in chapters 14 and 15. Wise (chapter 14) presents three possible scenarios for the future of the U.S. teaching profession: the business-as-usual scenario, the two-tiered scenario, and the professional scenario. In the business-as-usual scenario, yesterday's practices and today's policies remain in effect. In the two-tiered scenario, the structure of the educational system consists of a permanent and fairly well-paid cadre of senior teachers, administrators, and supervisors who induct, train, and supervise ever-changing contingents of temporary and less well-paid teachers. In the professional scenario, high educational and certification standards are carefully enforced, and salaries and working conditions are improved. Wise advocates the professional scenario as the most promising for producing professional teaching in the U.S. public schools.

Obanya (chapter 15) describes how a teachers' union in Kenya has assumed a leadership role in the professionalization of its members. Obanya states that the main objective of teachers' unions in developing countries has been national educational development. The stronger the union, the greater the chances of its making an adequate contribution to educational development and to the continuous improvement of the professional skills of its members. Teaching needs to receive adequate social recognition, and this includes authorities recognizing the professionalism of teachers and using this knowledge in matters concerning educational development.

Recent research evidence suggests that teachers' decisions regarding teaching practices are less related to their prior education or experience than with school-level management factors. These papers suggest that highly professionalized teachers or school principals can improve both the efficiency and quality of their school systems without major investments or cost increases.

11

TEACHER EVALUATION: A CRITICAL REVIEW AND A PLEA FOR SUPERVISED REFLECTIVE PRACTICE

F. Michael Connelly

Let me begin with the conclusion reached following my survey of reviews of the enormous amount of literature on teacher evaluation; doing so will ensure that there is no ambiguity about my perspective. I have concluded that in most systems teacher evaluation is too time consuming, costs too much, and has too few, if any, demonstrable benefits to warrant pursuing. Policymakers should make teacher education their priority, both pre-service and in-service, rather than teacher evaluation. Supervised reflective practice is one encouraging teacher education methodology. To ease your entry into the literature that supports this conclusion, I have prepared a short dictionary of teacher evaluation terms.

Teacher Evaluation: It's a Foreign Language

Like any specialized field, teacher evaluation has developed a special language within its literature. One can learn this language through osmosis by listening to speakers in seminars, by reading the literature, or by picking up terms on the fly; a process that more or less approximates how young children learn language. For our purpose, a more direct approach is useful. There follows a reasonably complete dictionary of terms you are likely to encounter in teacher evaluation.

Dictionary of Teacher Evaluation Terms

Academic learning time. The time students spend on academic activities, excluding time spent on such nonacademic matters as roll call, discipline, personal exchanges, and sports (see **time-on-task**).

Accountability. The responsibility of school practitioners (teachers, administrators, policymakers) to accomplish certain tasks. A school, for example, must "account for itself" in terms of the goals set by the local board of education, the community and, possibly, the government. Likewise, a teacher must account for herself/himself to the parents for the achievement and welfare of the children.

Aptitude-Treatment-Interaction (A-T-I). The idea that an educational treatment (something deliberately done in a classroom to achieve certain purposes) interacts with, and is therefore modified by, the aptitudes (abilities, interests, and predilections) of students. Thus, student achievement results are not purely the result of instructional treatment, and they are not purely the result of the students' aptitudes.

Behavior. What a person does: his or her actions. The emphasis is on what people (for example, teachers) observably do rather than what they say they do.

153

Characteristics. Those qualities, attributes, properties, or traits of the teacher (not of the teaching) that are thought to be important variables affecting student performance.

Correlation ("r"). A common sense term used in a technical way to give a numerical figure specifying the degree to which one variable changes along with another variable. A correlation may be positive (as one variable increases, so does the other) or negative (as one variable increases, the other decreases). In a curious twist of calculation, one must square when explaining a correlation. For example, if r = 0.3 for the correlation of the teacher trait variable "warmth" to the student variable "achievement in grade 8 fractions," we say that the relationship of teacher warmth to student achievement in grade 8 fractions is only .09 (that is, 0.3 x 0.3). Only 9 percent of the variation in achievement among students is explained by teacher warmth.

Effectiveness. A synonym for efficacy. A teacher who accomplishes the goals of a school system might be said to be effective or efficacious.

Efficiency. A measure of how much is done in a unit of time or for a unit of energy expenditure (for example, an efficient teacher might cover many mathematics questions in the **academic learning time** available, but the **effectiveness** might be low if the students did not understand the efficiently given teacher explanations.

Evaluation. Appraising the value or worth of something. Teacher evaluation, therefore, refers to judging the effectiveness of teachers and is usually done in terms of a set of standards or instructional goals. **Summative** evaluation leads to a judgment of the worth of what is judged. Summative teacher evaluation often leads to a final report and, possibly, to the hiring or firing of specific teachers. **Normative** evaluation leads to suggestions for improving the thing evaluated. **Formative** teacher evaluation leads to suggestions for the professional development of teachers.

Input-output studies. A form of **school effects** research in which the school is conceived of as an economic enterprise, such as an industrial plant or factory, that converts input variables (for example, literacy levels of entering students, or socioeconomic status of parents) into school output variables (for example, literacy levels and/or socioeconomic status of graduating students). The study by Coleman and others (1966) is the most famous of these studies.

Minimum competency testing. A testing process in which a person (for example, a teacher) must obtain a minimum score on specified competencies. Competencies might refer to teaching performances or to more basic abilities such as language, knowledge of mathematics, and so forth. Minimum competency tests provide a cutoff point below which a person is said not to have the required competencies for the job defined or for promotion to the next category or grade.

Observation. The act of watching something. May also refer to the results of the process as, for example, "My observation is that the male ring dove bowed twice followed by a coo prior to mating." In teacher evaluation, observation refers to the process of observing teaching in order to evaluate teacher effectiveness. In the literature of teacher evaluation, most people say they are observing **behavior**, but in more broadly-based work people say they are observing a "mind" or a person's "biography" at work in the actions.

Observation instruments. Forms (which may be anecdotal or **ratings**, see below) used by the observer to record a teacher's performance.

Peer evaluation. In teacher evaluation, peer evaluation refers to teachers evaluating other teachers. In general, teacher peer evaluation is a kind of formative evaluation designed to raise the quality of the teaching profession.

Performance. What teachers actually do, rather than what they report they did or what was in their minds.

Presage-product studies. Teacher effectiveness studies that correlate presage variables with product variables. Presage variables are typically associated with teacher characteristics, competencies, and training experiences. Product variables relate to the end products of instruction, most often defined by measures of student performance and of students' responses on specific tests.

Process-product studies. Teacher effectiveness studies that correlate process variables with product variables. Process variables are within the instructional act: teacher talk, student talk, lecturing, and use of materials. Variables may be combined to form other variables, for example, ratio of teacher talk to student talk.

Rating forms. Observation instruments may use a specific rating (for example, good, fair, poor, 1–5) to designate performance. Some observation instruments have no rating categories and are designed for anecdotal notes.

Reliability. In quantitative scientific studies, reliability refers to the trustworthiness of numerical measures of something: the chance that the same result would be obtained if the measures were taken again or if other researchers took the measures. Reliability in quantitative studies is often measured by a correlation ("r") of how close repeated observations are to one another.

School effects. The influences of schooling are separated from the other influences on educational development, for example, socioeconomic status and student ability. School-effects research tends to find little school influence on children's development, which, in opposition to teacher **effectiveness**, suggests that teachers make little difference to student learning.

Task view of teaching. This is a relatively recent notion developed because teacher characteristics and teacher behavior/performance correlate poorly with student achievement (that is, presage-product and process-product studies). A task view conceives of teacher effectiveness as the accomplishment by students of a set of tasks. The emphasis is on accomplishment rather than on doing the task. An effective teacher is said to be one who keeps students working on task.

Time-on-task. The time spent on specific instructional tasks is measured on the assumption that the more instructional time is spent on a specific task (within reason), the better the content of the task will be learned (see **academic learning time**).

Validity. In scientific studies, validity refers to the degree to which one measures what one wishes to measure. For instance, if one wanted to measure teacher warmth and decided to do so by counting smiles per class, some might argue there was low validity because warmth is such a complex trait that no single measure could represent it. Some might even say that smiles constituted an invalid measure since a teacher might smile out of habit or because smiling helped to distance the children. As with reliability, validity may be measured in different statistical ways. For instance, correlations may be used if it is decided that "psychological experts" are the best judges of whether smiling is a valid measure of warmth. The correlation of the judges' views on whether smiles are a good indicator of warmth establishes a numerical value for validity. A special notion of validity occurs in teacher evaluation where a **presage** or **process** variable is often said to be valid if it has a high **correlation** with student product variables. Thus, in predicting who will be an **effective** teacher, the idea is that one need only observe the teacher to determine if he or she has the valid presage or process variable.

Variable. Variables are measures that may vary in quantity or quality. Usually variation is treated quantitatively so that the subject of the measurement may be said to show greater or lesser variation, for example, achievement on a mathematics test, running speed, and teacher warmth (measured by the number of smiles in a class period). A variable is said to vary in quantity (for example, many smiles per class period or few smiles per class period; high mathematics achievement or low mathematics achievement). **Context variables** are situational factors that influence student learning but are not under the instructional control of

the teacher (for example, the socioeconomic status of the community). **Environmental variables** are synonymous with context variables.

The Teacher Effectiveness Literature

In drafting this section I have drawn on two helpful summaries of the teacher effectiveness literature: Ryan's *Developing a New Model for Teacher Effectiveness* (1986) and Stodolosky's *Teacher Evaluation: The Limits of Looking* (1984). For detailed summaries of various aspects of this literature, readers may wish to consult the American Educational Research Association's *Handbook of Research on Teaching* (Wittrock 1986).

The history of the teacher effectiveness literature begins prior to the turn of the century (Medley 1982) and may be divided into three overlapping phases: trait view phase, input-output view phase, and behavior view phase.

Trait View

The trait view basically consists of two steps: the identification of traits exhibited by good teachers and the evaluation of teachers according to the degree to which they show the desired traits. The original, and simplest, version of the first step was based on two assumptions: teachers are born and not made, and anyone may be a judge of teachers since everyone has been to school. Accordingly, the method followed was to ask students, parents, and others to recall their best teacher and then to describe that person's characteristics. The top six characteristics in Charters and Waples (1929) study were adaptability, consideration, enthusiasm, good judgment, honesty, and magnetism.

Several things may be said about this method, some in its favor and some against. First, because the identification is done following instruction, some years afterward, it may be assumed that teachers who left an impression, and therefore made a difference, were effective teachers and would be identified. By contrast, in observational studies, we know little or nothing of long-term effects since evaluation is based on the teaching process as it occurs. Furthermore, trait studies seldom distinguish between basic human characteristics, which are barely influenced by teacher education processes, and educable characteristics such as knowledge of content or a person's question-asking skill. This is a mixed blessing. Since it is a total human being who enters the classroom, that person's qualities as a human being, as well as his or her qualities as a teacher, are important to teaching. In some of the more scientific approaches, however, bizarre characteristics tend to show up. There is a story from one of the main research laboratories that following a detailed study of best teacher characteristics, shoe size correlated most highly with best teacher. Furthermore, the blending of characteristics leaves little possibility for intervention. Eventually, a category of educable teacher competencies was incorporated into the trait view. Competencies tended to be broken down further into teacher knowledge, teacher skill, and teacher belief.

In the second step, rating forms were developed that allowed observers (researchers, superintendents, government officials) to record their judgments about the degree to which teachers had the traits thought to be important. Two things could then be done with these ratings. Their reliability could be determined by calculating the correlation of two or more ratings of the same teacher, and their validity could be determined by correlating the rating with student achievement. Studies that linked teacher traits to student achievement came to be known as presage-product studies. According to Ryan, results on both counts have been unusually disappointing, with reliability measures running at roughly $r = 0.3$ and validity at close to zero. In other words, two or more raters show little agreement on which teachers have a set of traits, and the ratings on a set of teachers show almost no relationship to student achievement.

The general conclusion from this work is that people cannot agree on whether a person is a good teacher, and there is very little relationship between ratings and student outcomes. This applies both to teacher characteristics and to teacher competencies such as knowledge, skill,

and belief. While teacher trainers may feel confident in qualifying the teachers they do, and school or government officials may feel confident about the judgments they make about teachers, there is little basis in fact for their confidence. By and large, judging the effectiveness of teachers by the traits they exhibit is a hit-and-miss affair. In 1953, an American Educational Research Association (AERA) document concluded that after 40 years of research on teacher effectiveness, "one can point to few outcomes that a superintendent of schools can safely employ in hiring a teachers or granting him tenure, that an agency can employ in certifying, or that a teacher-education faculty can employ in planning or improving teacher-education programs" (AERA 1958, p. 657). Twenty years later, Dunkin and Biddle (1974) still believed that there was little reliable information on the relationship between teacher characteristics and student achievement.

Input-Output View

Input-output studies, a version of the more general study of school effects, are not directly focused on teacher effectiveness. Instead, they examine economic, student ability, and sociological inputs to a school, as well as school outputs in the form of achievement, attitudes, and careers. Schooling itself is treated as a black box, but because these studies tend to question the effectiveness of schooling (see, for example, the famous Coleman and others 1966 study), teachers tend also to be tarred with the brush of ineffectiveness. If schools make little difference (as suggested by input-output studies), then, so the argument goes, teachers must also be ineffective.

This literature is concerned with schools and not teachers, so there is no distinction drawn between different teachers. Teacher effectiveness research is concerned with differentiating the effects of teaching.

One of the consequences of the school effects literature was that those committed to schooling and to the idea that teachers make a difference tended to shift their interest from specific teacher traits and characteristics and presage-product studies to overall studies of teaching process.

Process-Product View: The Study of Teacher Behavior

According to Ryan, the process-product view of teacher evaluation can more or less be dated to an article by Medley (1982) in which a complex set of four variables was identified: process, product, presage, and context/environment. Using this schema, it was possible to separate presage variables (teacher traits) and context/environment variables (neither of which are much influenced by teacher education) from process and product variables. The emphasis is on the study of teaching as a process and its correlation with product variables such as student achievement.

According to Ryan, there have been three major results of this research:

- the idea of the teacher as "classroom manager" of the learning environment;
- the emphasis on academic learning time or time-on-task by students;
- the return to a teaching strategy in which teachers ask high-level questions, a version of the old drill-and-recitation method.

By the 1980s, there was some excitement in parts of the educational community about the results of this research. For instance, Medley (1982, p. 1898) wrote "they were the first clear-cut usable findings obtained in eighty years of research in teacher effectiveness." But the optimism was short-lived. Ryan's own work (1986) is illustrative and informative.

Ryan reports on the Classroom Environment Study conducted for the International Association for the Evaluation of Educational Achievement (IEA). Because of the enthusiasm for process-product research, the IEA's aims were ambitious: "To identify the similarities and differences in teaching practices and the conditions of learning as they occurred in a variety of

countries," and "to identify those teaching behaviors that were associated with greater student achievement and to combine these behaviors with more general teaching practices which could be taught to teachers in an effort to improve teaching and learning" (1986, p. 17). Nine countries participated in the study and fourteen different instruments were developed. Classroom observers were trained. At least 240 discrete variables were identified. These, in turn, were organized into 15 categories. The observations were extraordinarily refined. Ryan (1986, p. 24) writes: "For the classroom instruction variables, approximately sixty codes were made on each of three dimensions (context, direction, and nature of interaction) during each five-minute segment of classroom times. This was repeated five times, for eight lessons, totaling 72,000 codes for one classroom in one country." In short, this was a massive study conducted in extremely refined detail.

However, the results were so discouraging that Ryan abandoned process-product studies as a basis for evaluating teacher effectiveness. She writes: "Our efforts to use a process-product research model to generate knowledge of effective teacher behaviors . . . failed to yield such knowledge . . . the process-product model of teacher effectiveness research falls far short of what we need to move from research findings to implications for improving teaching and learning " (1986. pp. 41–42). Results such as these led to the view that most of the variable that appear on rating forms used in teacher evaluation have little to do with the improvement of instruction and are heavily weighted toward superficial performance tasks. Why? Because as research such as Ryan's demonstrates, the people that make and use the forms do not know what constitutes good teaching.

Even those who persevere in this line of work tend now to qualify their research. Two of the best known, Brophy and Good (1986), recently summarized process-product research for the American Educational Research Association's *Handbook of Research on Teaching*. They dodge the "teacher evaluation" bullet by writing:

> It is a misnomer to refer to the research summarized here as 'teacher effectiveness' research, because this equates 'effectiveness' with success in producing achievement gain. What constitutes 'teacher effectiveness,' is a matter of definition, and most definitions include success in socializing students and promoting their affective and personal development in addition to success in fostering their mastery of formal curricula. Consequently, we have avoided the term 'teacher effectiveness' (p. 328).

In short, Brophy and Good realize that achievement outcomes are poorly related to the process studied.

What all this means for the school system, of course, is that even the most modern teacher evaluation instruments are not totally valid for identifying effective teacher performance. When it comes to predicting student achievement, supervisors are deluding themselves if they believe that what they observe is a predictor of student achievement. It is easy to judge teachers. It is next to impossible to evaluate their effectiveness with the instruments now available.

The Teachers' View of Teacher Evaluation

Darling-Hammond of the Rand Corporation (1987) summed up the current state of teacher evaluation in school systems with the following remarks:

> Teacher evaluation can be utterly unimportant. In many school districts it is a perfunctory bureaucratic requirement that yields little help for teachers and little information on which a school district can base decisions. Teachers anticipate a brief annual visit from the principal, who, according to the stereotype, stands stone-faced at the back of the classroom filling out a form. And principals rush to squeeze in their visits to teachers amid their myriad of other duties. Hurried conferences are held, and forms are signed and filed. The exercise does little for teacher except contribute to their weariness and reinforce their skepticism of

> bureaucratic routing. Isolated from decisionmaking and planning, it does little for administrators except add to their workload. (pp. 531–532).

Darling-Hammond's remarks turn our attention to how teacher evaluation is perceived by teachers. Presumably, if the process is to be effective, it needs a modicum of support from those most directly affected by it. Lawton and others (1986) did a study of teacher views on teacher evaluation. Here are six of their conclusions:

- Teachers do not believe that teaching has improved because of teacher evaluation.
- Teachers prefer a counseling and interview approach over an observation approach.
- Teachers believe that if they are to be evaluated, their supervisors should be evaluated as well.
- Teachers believe that summative and formative aspects of evaluation should be sharply separated. Formative evaluation will not work if it is tied to summative goals.
- Teachers believe that peer- and self-evaluation are best.
- Teachers believe that multiple sources give the best picture and that no single methodology, such as observation, should be used alone.

These findings add further weight to the reliability and validity studies on teacher evaluation. Not only do research studies suggest that teacher evaluation fails to improve instruction, but also teachers hold the same view.

In her article, Darling-Hammond (1986) goes on to argue for a peer-based teacher evaluation system to increase the professionalism of teaching. There are many positive things to be said about peer evaluation as it is a form of in-service education aimed primarily at improving instruction. In some developing countries, however, the level of expertise within the profession is, perhaps, not sufficiently high to warrant such a system. Peer evaluation assumes that a significant number of teachers have high qualifications. An alternative, suggested below, is supervised reflective practice.

Why Is Teacher Evaluation so Ineffective?

After close to ninety years of research, we may wonder why we are so little ahead of where we were at the turn of the century. People remember great teachers and can list their characteristics, but when two or more people rate the same teacher using agreed upon traits, they cannot agree on their rating. Furthermore, there is little relationship between ratings and student achievement.

Rating teacher behavior in classroom processes and relating these ratings to student achievement does not improve matters. In short, we do not know what we are doing in teacher evaluation. We do not know what a good teacher is, we do not know what good teaching is, and we do not know how either is related to student achievement. How can this be? Stodolsky (1984) and Wise, Darling-Hammond, and Berry (1987) outline some of the reasons. My observations, supported by these two sources, are listed below.

- The evaluation of teachers is based on the assumption that the characteristics of effective teachers are known. This assumption may possibly be true in a broad philosophical sense. For example, Dewey's (1938) idea that teachers cooperate with children's natures in educational situations to bring the cultural and personal past to bear on moving toward a vision of the future is philosophically true and the mark of good teaching. The problem comes in being able to evaluate a specific teacher and to say with confidence that he or she has the traits and behaviors that accomplish what is entailed in the philosophical notion. Thus, while we may know what makes a good teacher in general terms, we do not know what a good teacher is in practical, person-specific terms. We may "know" what good teachers are, but we cannot "recognize" who they are. The ninety years of research has been a period of "failed recognitions."

- Teacher evaluation assumes stability and consistency of teacher behavior. In fact, teacher behaviors vary from day to day, from class to class, from subject to subject, and from age group to age group. Instead of being stable, teaching is best seen as situationally determined. A corollary to this point is that the more often a rater observes teachers, the more variations he or she notices, and the less confident he or she becomes of the ratings. Thus, teacher observation is most confidently viewed by those inspectors who visit a classroom only once and for a short time.
- Teacher evaluation often assumes constant teacher behavior across subjects, but different subjects require, and bring out, different teaching behaviors. A former English teacher, now acting as a supervisor, may, for example, inappropriately rate teachers in subject areas such as science, using ideas from his or her former English teaching days.
- Teacher evaluation tends to assume that all students respond to teaching in the same way. On the contrary, students with different socioeconomic, mental, and personality characteristics, as well as students at different grade levels and in different subject areas, benefit from different kinds of teaching. Furthermore, there is evidence to show that even when a particular teacher behavior seems to work with students, repeated use can produce a decreased, and even negative response. There can be too much of even a good thing.
- Teacher evaluation tends to assume that all aims of education are achieved in the same way. There is, however, evidence that teaching behaviors that encourage higher student achievement on standardized tests are opposite from those that increase learning. In other words, the greater the correlation between teaching behavior and student achievement, the less important the outcome is to our purposes in education. The following teacher evaluation maxim describes this phenomenon: implementing successful teacher effectiveness findings results in increased student achievement on unimportant matters and decreased achievement on important matters.

What is the Future for Teacher Evaluation?

One thing that academics do when their research does not pan out is refine the details, hoping thereby to penetrate the cloudy veil and find the truth beneath. Two such related approaches are currently in vogue in teacher evaluation: the activity structure approach and the task accomplishment approach.

Following her analysis of why presage-product and process-product approaches were largely ineffective, Stodolsky (1984) proposed a situation-specific, activity structure approach. In this approach major factors resulting in teacher performance instability and achievement variability were used to characterize specific instructional activities.

Stodolsky illustrates the procedure by describing a study of 20 fifth-grade mathematics classes and 19 fifth-grade social studies classes in the Chicago area. Detailed records of activity structures were made using the following procedures. An observer watched each student for five seconds and noted the behavior and task. Every thirty seconds a new student was observed for five seconds. This was done over a two-week period, resulting in approximately 260 hours of observation. Following observation, activity structure records were broken down into activity segments. Some 535 activity segments in mathematics and 545 activity segments in social studies were identified. For each segment it was determined whether students were on task according to the definition of the behavior expected by the teacher for this segment. This detailed analysis was then integrated in terms of key features of the segments, for example, instructional format (seat work, recitations, and so on), pacing (that is, who determines the rate of work in an activity: teacher, student, or mechanical, as in watching a film), and cognitive level (seven cognitive levels for this study). In sum, the Stodolsky approach is to break activity structures into very specific activities (called segments), and then to determine the character of the tasks performed.

Upon abandoning the process-product model, Ryan's response (1986) was to argue for a task accomplishment approach to teaching. This notion, as the title suggests, is similar to Stodolsky in its focus on tasks. However, Ryan's emphasis is on what is actually accomplished. Her view is that it is not what teachers are or what they do, but what they accomplish that is important. As a screen to view classrooms, she provides a detailed chart of task categories in which the whole structure is pre-specified. In Stodolsky's approach the task structure emerges from the classroom analyses. For both the mind reels at the weight of refined detail. It is difficult to imagine (at least at this stage of their work) either Stodolsky's activity structure approach or Ryan's task accomplishment approach having practical possibilities for school system administrators concerned with teacher evaluation.

A Curriculum View of Teacher Evaluation

An even more general explanation for the ineffectiveness of teacher evaluation than those already offered is that most of the research has been conducted by educational psychologists whose outlooks tend to be unsuitable for understanding complex school situations. Indeed, the history of educational studies in North America is basically the history of the application of a special version of psychology to a wide-ranging set of educational problems. For example, in the 1950s and 1960s, when curriculum development was in its heyday, the most conspicuous North American developers were applied psychologists such as Bruner, Ausubel, and Gagné. The teacher evaluation literature is dominated by the names of educational psychologists, and currently, when teacher education rather than teacher evaluation is predominant, psychologists are again coming to the fore. Educational psychology, to use a term borrowed from the literature of critical theory, has established a hegemony over the way North American educators approach their problems. The operational equation is: educational problems = applied psychology problems.

In my view, this reductionist equation has not served the interests of the educational community well. Teacher evaluation is a case in point. By the very character of their field of study, psychologists are compelled to look inward when investigating problems. When this inward viewpoint is combined with the psychologist's penchant for experimental agricultural methods, a powerful hegemonic view of educational problems emerges. It is a view in which every educational problem is marked by two features: by looking inward problems are broken down into parts, usually examined as behaviors and ever more refined behavioral detail (to the exclusion of either a holistic or outward look); and correlational and quasi-experimental methods are applied to the exclusion of naturalistic and experiential methods. This is the precise history of the teacher evaluation literature traced above. But alternatives are available.

One such alternative is a curriculum view (Tyler 1950; Schwab 1962), which has four everyday, commonplace concerns: the teacher, the student, the subject matter, and the social context. By contrast, as we have seen, the teacher evaluation literature, dominated by a psychological perspective, has been reduced to correlations between teacher behaviors and student outcomes. From the standpoint of educational systems, a curriculum view requires, in addition to concern for teachers and students, that both subject matter and social context be considered. For purposes of this paper, I shall call these two concerns curriculum policy and local conditions, respectively. Let me offer a brief note on each.

There is no ideal standard by which a school system or its teachers may be judged. Instead, a school system sets its own standards of effectiveness in terms of the policies it sets forth. Policies vary from system to system and even from part to part within a system. The different educational policies adopted by the provincial governments of ch of the ten provinces in Canada is illustrative (Connelly, Crocker, and Kass 1988). However, while the details vary, the overall function of policy is the same, namely, to specify a general outlook and set of expectations for the school system. Sometimes these expectations are defined in subject matter terms and sometimes more broadly in terms of student, subject matter, and social purpose. From this curriculum point of view, teacher evaluation is, first and foremost, a process of relating

school outcomes and processes to the intentions captured in a system's educational policy. Given this view, it is impossible to evaluate teaching in isolation of the policy context.

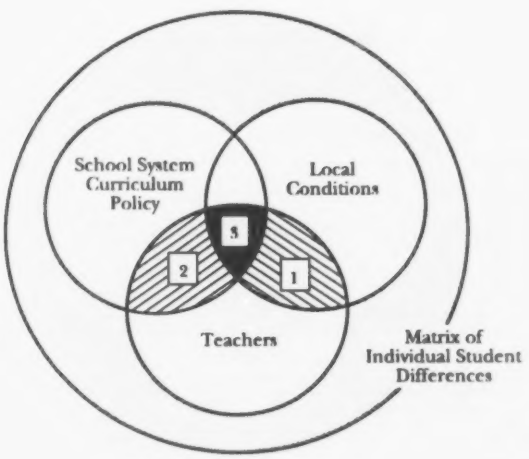
The significance of local conditions is most easily illustrated at its extreme where one school system imports an educational policy from another school system whose culture is significantly different. This is precisely what happened in colonial nations. Now what, according to common sense, would define good teaching in such a situation? Obviously a good teacher would radically alter the imported curriculum policy to make it relevant to the local situation.

The point then made in the extreme for colonial systems is what happens to some degree in every system. No policy can act as a rigid frame to control all actions. Even the best policies require modification for local circumstances: urban and rural, fishing and land crop communities, rich and poor, tribal and open, and so forth. In addition, every teacher needs to adapt the curriculum to fit the different capabilities and interests of particular students and, on a moment-to-moment basis, to make adjustments for particular classroom situations. Accordingly, from a curriculum point of view, a good teacher is one who adjudicates between local circumstances and the specifications of policy.

A teacher whose performance is only vaguely consistent with, or even in opposition to, policy should not necessarily be judged negatively until it is determined what, in actual fact, the teacher is doing. This cannot be seen by an observer or evaluated on a rating instrument. It is necessary to consult the teacher to determine the reasons why he or she is conducting the curriculum adaptations in a particular way. It is possible, of course, that the teacher is indifferent, lazy, or stupid, and a negative evaluation is warranted, but it is also possible that the teacher may be undertaking policy adaptations for very good reasons. No amount of classroom observations will determine this precisely.

Figure 11-1 is one way to represent this curriculum view of teacher evaluation. The key ingredients illustrated in figure 11-1 are school system policy, local conditions, and teachers. In the instructional setting, these interact with one another and may be thought of as taking place within a matrix of individual student differences such that different students respond differently to teachers, to local conditions, and to policy.

Figure 11-1. A Curriculum View of Teacher Evaluation



If we imagine a curriculum-based notion of teacher evaluation, three hypothetical possibilities (noted in the overlapping circles of figure 11-1) emerge.

Overlap position 1. In this position, we find teachers developing a curriculum to meet the needs of students in the local situation and doing so without reference to school system policy. In this extreme version of a teacher "doing his or her own thing," a sensitive supervisor/teacher evaluator still needs to ask why a teacher is using a particular curricular strategy, rather than automatically evaluating the teacher negatively for not following policy. Because policy can never match local conditions entirely, a teacher acting outside the bounds of policy is more likely a symptom of inadequate policy than of inadequate teacher performance. In my home province of Ontario, for example, a study showed that up to a third of the total high school biology curriculum taught in local boards of education was not covered by provincial government policy (Connelly 1977). The reason for this was that government policy was twenty years out of date, and at least a third of the material currently identified in the dated policy was taught at lower grades. In short, this is a case where the most advanced and best teachers were properly spending a great deal of time in overlap position 1, essentially outside the bounds of policy.

Overlap Position 2. This extreme hypothetical position is one in which teachers follow school system policy to the letter without reference to the local situation. An example is colonial education, where teachers were expected to teach a curriculum imported from a distant, different culture. "Beating them into shape" might be the curriculum motto for such a situation. There is a mindless tendency to evaluate positively teachers who follow the dictates of policies in situations such as this, but a reasoning supervisor/evaluator would soon see the irrelevance of such a policy to local circumstances and judge such teaching to be inadequate, and what is seen so clearly in colonial education is also true for home-grown school system policies. Every system policy is, in some measure, colonialist from the point of view of local communities. Thus, a teaching profession with an uncritical commitment to school system policy is more to be criticized than praised.

Overlap Position 3. This, of course, is the ideal situation. It is one in which teachers adapt system policy to the local situation. While easily stated in principle, it is extremely difficult to evaluate in practice. How much adaptation of the curriculum is necessary to meet the local situation? What, indeed, is the local situation? What does the policy say and what does it mean? These questions are central to the evaluation process, but are questions that cannot be answered in the abstract; nor can they be answered by classroom observation only. It is necessary, in such situations, for a supervisor/evaluator to gain, through discussion with school administrators and teachers, an understanding of local circumstances and of how the central policy may be adapted to meet those circumstances. There is no single ideal solution to the question of adaptation. Different adaptations will be appropriate depending on time, place, grade level, subject, and student and teacher capability. Thus, teacher evaluation becomes a complex process of judging the appropriateness of the adaptive mix of policy and local circumstance that occurs in a particular school and/or classroom situation.[1]

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1. I began this paper with a declaration of opposition to teacher evaluation. Why then did I offer a curriculum point of view on this topic?

My answer is humbly practical. In discussions of the World Bank seminars, it was pointed out that many of my ideas presupposed a comparatively luxurious educational system in which classrooms had books and supplies, schools had libraries and storerooms, children went to school until their late teens, teachers were university educated, and educational arguments raged over the introduction of the latest in modern curriculum developments.

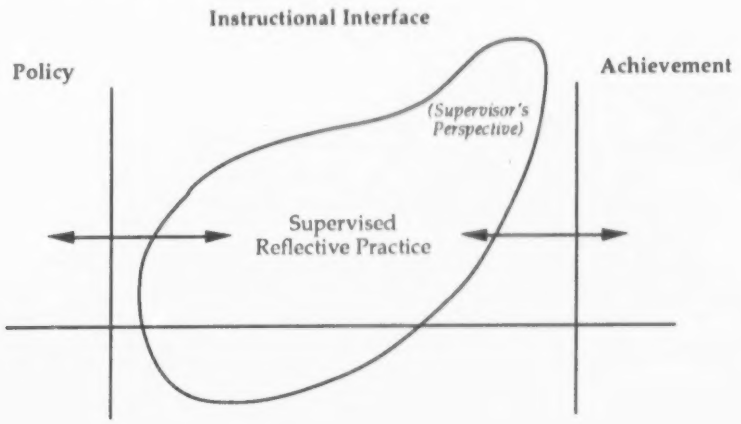
By contrast, many of those at the last seminar were dealing with school systems in which even the most rudimentary equipment was in short supply, and teachers had little, if any, education beyond those they taught, and where teacher attendance was as significant a problem as student attendance.

From Teacher Evaluation to Teacher Education

I now want to call a spade a spade. Teacher evaluation is essentially a euphemism for getting rid of bad teachers. "Looking and firing" might well be the motto. An alternative motto might be "watching, talking, and helping," which relates instead to teacher education or professional development. In this section, I shall discuss very briefly a process aimed at the education of teachers rather than at their replacement. I propose to call the process supervised reflective practice. I also offer certain caveats on the uses of supervised reflective practice insofar as it is no different from any other educational practice in its potential for misuse.

Supervised reflective practice is a common sense notion of how teachers may develop their strengths through consultation with supervisors and fellow teachers about their actual teaching practices (Fullan and Connelly 1988). Figure 11-2 schematically illustrates the process. It is an adaptation of a notion promoted by Schon in his two major works (1983, 1987). Schon's idea is that practitioners are essentially self-educated through pursuit of their ongoing practices and through reflection upon them. Teachers, he argues, learn from teaching. Schon distinguishes between reflection-in-action and reflection-on-action. He views teaching as a sequence of problem finding and problem solving episodes in which teachers' capabilities continually grow as they meet, define, and solve practical problems. The ongoing problem finding and problem solving process he calls reflection-in-action. Reflection-on-action refers to an after-the-fact assessment and evaluation of what was done. The teacher who sits down for an hour at the end of the week and thinks back over the week, all the while reminding him- or herself of successes, failures, and things that might have been done differently, is engaging in reflection-on-action.

Figure 11-2. Improving Instruction (Watching and Helping)



Many of these problems do not require the sophistication of teacher evaluation as described in the literature or found listed on evaluation instruments. Excessively subtle process-product studies are not needed to deal with negligible teacher qualifications and teacher absenteeism. I do believe, however, that firing is not necessarily the answer. As always, the question to ask of teachers is "why." If school system officials are satisfied that the answer to why is personal incompetence then, of course, firing is warranted, but if it has to do with the conditions of schooling, either in the community, the school, or teacher education, then school officials need to look elsewhere. They need to review their methods, if any, of teacher education, teacher selection, and in-service education.

Be that as it may, my purpose in offering a curriculum view of teacher evaluation was to mitigate the excesses of teacher evaluation conducted according to the teacher trait and/or teacher performance view. A curriculum view will sensitize school system officials to the subtle interweaving of local circumstance and system policy and of the multiple demands on a teacher's intelligence to bring about a harmonious interplay of the two.

Supervised reflective practice is a version of Schon's reflection-on-action in that it is a deliberately undertaken process of reviewing what one has done and what one might do better in the future. Reflection is not a new idea in education (for example, Dewey 1933, 1938), but it is an idea that runs so counter to conventional teacher evaluation that it has tended to be submerged in the educational consciousness.

Supervised reflective practice capitalizes on the fact that many school systems already have a cadre of supervisors. Supervisory staff could be directed to teacher education rather than to teacher evaluation by working cooperatively with teachers in a reflective process. In its simplest form, supervised reflective practice could occur in three steps:

1. **The observation session.** The supervisor observes a class and makes a descriptive record.

2. **The reflective conference.** Following the observation session, at a time convenient to both the teacher and supervisor, the two meet to discuss the observation record. The supervisor acknowledges that the observation session represents a small slice of the teacher's total work and accordingly adopts a nonevaluative stance. Illustrative conference discussion points are listed below:

- *Temporality.* Where does this lesson fit in the overall scheme of things for this class? What have you been doing? What do you plan to do next?
- *Intentionality.* What are the general purposes of this course (your teaching)? How does this observation session fit into your purposes?
- *Descriptive.* Here is what I recorded. Did I get this right? What other things were you doing that I missed?
- *Explanation.* I noticed that you seemed to spend much of your time in discussion with the boys. The girls kept getting put off. Is that a fair observation? Why do you think this is happening? Is it something that you might want to change? How might that be done?
- *Local circumstances.* Let's talk about this community and the homes of the children. What do the children do after school? Do you feel comfortable with this course (this lesson) for these children? If you could do what you really think should be done for the children of this community, what would that be? How would you build on what you are already doing?
- *School system policy.* How much attention do you pay to government (school board, school) policy? Is there a policy document somewhere in the school connected to the lesson I just observed? Let's look over that policy and see how relevant it seems to be for these children.
- *Personal.* It is clear to me that you have many strengths as a teacher. Where do you think these originate? Do you feel you are making the best use of your talents? What are some of the main experiences that you've had that you'd like the children either to share or to avoid? Are there aspects of your ongoing life or life history that parallel the lives of these students? What sort of lives do they lead? Perhaps we could talk about the links between your experience and theirs. What lessons do you think you have learned from your own experience as a student (as a teacher, in life) that help in teaching this class? Let's swap educational stories. After we've each told three stories, let's ask ourselves why they were remembered and what meaning they have for us and for our teaching.[2]

Note these sample discussions are set up as if the supervisor were directing the conference. But the idea is to encourage teachers to be as autonomous and self-directed as possible in their reflections. Supervisors should be sensitive to the possibility that the conference will be

2. Interview and storytelling are two of over a dozen useful techniques described in my book with D. Jean Clandinin (Connely and Clandinin 1988b).

teacher directed; and the more the teacher has a feeling for reflection, the more likely this is to happen.

3. **Follow-up conference.** A month or so later, the supervisor and teacher might meet once again. If time permits, the supervisor might add another observation session, but it is not essential. In this session, the discussion would take the following general form: "Let's talk about our last conference. There are several things I remember especially that I would like to discuss and hear what you have done as follow-up."

This bare-bones outline of a three-part structure for supervised reflective practice can be expanded and modified in many different ways. The process, for example, could be as important for the pre-service education of teachers as it is for their in-service education (Connelly and Clandinin 1988a, 1988b; Clandinin 1989). I can imagine situations in which the formal education of teacher aspirants was entirely through internships with other experienced teachers. In the internship approach to teacher education, a shift of supervised reflective practice roles might take place over the duration of the internship. The student teacher would begin the apprenticeship by playing the role of observer/supervisor. Conferences would be devoted to discussion of the student teacher's observations of the host teacher's practices. Conference discussion would cover the range of questions discussed above, but now it is the novice teacher asking the experienced teacher to reflect upon and explain his or her teaching. In this way, we might imagine that both the novice teacher and the intern teacher would be mutually educated: the novice teacher by learning to observe well and ask productive questions and the experienced teacher by examining practices and by having to explain these to the novice teacher .

Over the course of the internship, the student would increasingly take on classroom responsibilities. As this happened, the intern teacher would shift roles from that of observed teacher to that of observer/supervisor, and the novice teacher would shift roles from observer to the role of teacher.

Staffing, of course, can be a problem, since it is unlikely that many school systems have sufficient supervisors to work with all the teachers in a system. In the end, of course, there is no need for specialized administrative staff to undertake these roles. Just as the intern teacher can function as the supervisor in the education of a novice teacher, so too can experienced teachers perform the roles for one another. We might think of this as an adaptation of the notion of peer evaluation suggested by Darling-Hammond (1986). Now, however, teachers would sit in on each others' classes and do the sorts of things described above in the outline of the three-part structure of supervised reflective practice.

School systems that lack confidence in their teaching staff to perform these professional teaching roles might begin by educating a special cadre of teachers in the skills and habits of reflection. Summer, weekend, evening, and other workshops for teachers might be conducted until the school system had confidence in its teaching staff to carry on supervised reflective practice sessions for novice and experienced teachers. There is no special reason why administrative personnel would perform the role of supervisor, and there are two principal advantages to having teachers supervise teachers: more rapport and trust will permeate the enterprise and both parties will be self-educated in supervised reflective practice.

A Final Caveat

Tucked into the upper right-hand corner of the supervised reflective practice "blob" in figure 11-2 is the term "supervisor's perspectives." Here's the rub that leads to the caveat. Just as I have admitted to biases in outlining this paper, so too does every supervisor have biases. Supervisors will not sit neutrally in a supervised reflective practice conference even though they may discipline themselves at the outset to minimize their evaluative comments. They will still ask certain questions, phrase questions in a certain form, and otherwise shape the conference in ways that fulfill their deepest personal knowledge about teaching, children, and

education. I have here referred to these overall personal outlooks as the supervisor's perspectives.

To take an extreme example, let us suppose that a government supervisor has a basic colonialist attitude toward school system policy. Suppose the supervisor was educated abroad and taught subtly to believe that the home country is somehow inferior, perhaps a naive and childish version of the more sophisticated country in which his or her advanced education took place. Such a supervisor might (even against his or her own expressed conscious wishes) push the discussion so as to leave the teacher with the feeling that the really important thing was to make sure that colonial government policy was fulfilled. The idea of colonialism in education (as argued above) is essentially a symbol for the relation between local situations and central authorities in any educational system, whether colonial or home grown. An urban supervisor with a fishing village teacher, a university-trained supervisor with a school graduate teacher, or a supervisor raised in one tribe with a teacher from another tribe all have the potential for "colonial" bias.

Do we wish to squash bias? If we could, would we wipe it from the slate? The answer, of course, is no. In the end, all education may be thought of as the education of our biases. Bias (expressed, perhaps, more positively as outlook) is what makes us what we are, but what we are may not be all that desirable, and we may leave unintended scents in the air. What to do about it? The answer, once again, is reflection. Returning again to the three-part supervised reflective practice structure, the final topic that the teacher and supervisor might discuss is bias. They would treat both the first and second conferences in the same way and would ask: "What were we doing in our two conferences? Did you or I seem to shift things one way or the other? What difference did this make to our discussion? How else might our discussion have gone?"

With these sorts of questions, supervised reflective practice is able, albeit humbly and with no promise of perfection, to turn a reflective eye upon itself.

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12

Teacher Training in Developing Countries: Lessons from Research

Beatrice Avalos

In the 1960s and 1970s, determinants of achievement surveys spawned pessimism about the extent to which teachers in developing countries can affect student performance. Fortunately, however, teaching can be altered. This potential for change inspired investigation of ways to separate the effects of background conditions (socioeconomic status and other characteristics of students and teachers) from the actions of students and teachers in educational settings.

Recently, with the advent of more complex methods of statistical analysis, the survey data have been reanalyzed by the International Association for the Evaluation of Educational Achievement (Heyneman and Loxley 1982; Husen, Saha, and Noonan 1978). Analysts hope it will be possible to show that in developing countries, school- and teacher-related factors have more important effects than were reported earlier. This analysis has been supported by other studies of teaching situations and the influence on student learning outcomes.

Assuming that teachers do have an important influence on the educational systems of poorer societies, I will focus on issues related to teacher training. I will consider research that bears on teacher training and that relates to a proposed framework for examining that training. In both perspectives, the research will be selected from developed countries that has influenced the developing countries and from the research available from developing countries.

Teacher-related research relevant to the formulation of training schemes is grounded on one or other of the following assumptions:

- It is important to understand what teachers do that influences student outcomes (cognitive, affective, or social). This assumption underpins process-product research.
- It is important to understand who teachers are, how they interpret classroom needs and events, and how they make decisions that affect their teaching practice, and indirectly, their student outcomes. Research on teachers' thinking and decisionmaking responds to this concern, but earlier research on teacher characteristics is also relevant.

The key feature of both assumptions lies in the process of interaction, the "hidden curriculum"; what is really communicated to students and how it differs from what is explicitly being taught.

Underlying the ways in which these concerns have been addressed in existing research are different philosophies of teaching and, more specifically, different concepts of teacher effectiveness. Thus, one can find studies that (a) stress measurable observed behaviors, or (b) examine nonquantifiable modes of communicating or interacting in the classroom. Some studies look at present characteristics of teachers; others try to assess what characteristics can be learned. With students, some studies stress the acquisition of basic skills or development of higher-order intellectual activities; others stress awareness of the social world or the development of social skills; and so on. Thus, there should be no naive expectations that in

examining research one will discover a specific concept of teacher effectiveness, and so be able to design concrete proposals for teacher training.

Teacher Behavior and Student Outcomes

The section below examines research done in developed and developing countries relating teaching and student outcomes. Since very little research is available from developing countries, direct comparisons cannot be made at this stage.

Research on Teaching in the United States and the United Kingdom

The history of teacher-based research during the past twenty years in North America and the United Kingdom has moved from philosophies of teaching that stress a child-centered approach, indirect teaching, and learning by discovery to a more restricted concern with teaching skills that approximate what Rosenshine (1979) calls "direct instruction":

> Direct instruction refers to academically-focused teacher-directed classrooms using sequenced and structured materials. It refers to teaching activities where goals are clear to students, time allocated for instruction is sufficient and continuous, coverage of content is extensive, the performance of students is monitored, questions are at a low cognitive level so that students can produce many correct responses, and feedback to students is immediate and academically oriented. In direct instruction, the teacher controls instructional goals, chooses materials appropriate for the students' ability, and paces the instructional episode. Interaction is characterized as structured, but not authoritarian. Learning takes place in a convivial academic atmosphere. The goal is to move the students through a sequenced set of materials or tasks. Such materials are common across classrooms and have a relatively strong congruence with the tasks on achievement tests. Thus, we are limiting the term "direct instruction" to didactic ends, that is, to instruction toward rational, specific, analytic goals. The didactic exercises that characterize direct instruction are predominant in the materials for reading and mathematics that are currently in use as well as in achievement tests in those subjects. (p. 38)

A number of correlational studies in the United States have addressed this view of teaching (see list provided by Brophy 1979). According to these studies, students learn better when taught with a structured curriculum, lectures, and demonstrations, as well as with recitation, drill, and practice. Learning is related to time allotted to instruction and to actual student engagement in learning. Task-oriented and businesslike teachers are more successful and involve the class as a whole, not just a limited group of students. Well-managed classrooms are those where techniques for preventing disruption are employed, students are busy, and an effective learning environment exists. Similar studies carried out in the United Kingdom support this approach (Bennet 1976; Barker-Lunn 1970).

Recently, however, the simplicity of direct instruction has been challenged by several theoreticians and researchers. Anderson (1984) contends that it is not enough to know what it is that teachers do that affects learning. It is also necessary to understand why and how this occurs both in the macro-context of society and in the micro-context of the classroom. Peterson (1979) challenges the adequacy of learning only the lower-order cognitive skills for which "direct instruction may be useful": parents, she says, are interested in their children's achieving "a wide variety of social and humanistic goals—not just the so-called basics." Galton and Simon (1980) argue that Bennet's conclusion that British primary teachers using direct methods are more effective in producing learning is not empirically warranted because classrooms assumed to be indirect and child-centered appear not to be so when directly observed. Direct instruction is also criticized for paying little attention to what students bring to the learning process. By attending only to teachers' skills and behaviors, direct instruction does not consider how students mediate, interpret, and thereby learn what is intended. Within this mediating approach, Doyle (1980) focuses on the concept of tasks, which he sees as the link between teaching and the processing of information. A task provides the context that regulates

the selection of information and the choice of strategies for learning. Understanding the nature of the task is, therefore, crucial to the teaching process.

Also to be considered is the concept of teaching styles that was developed in the United Kingdom by Bennet (1976) and Galton and Simon (1980). It is a composite of several of the types of behavior researched under the direct instructional approach by Galton and Simon from observation of fifty-nine primary classrooms.

> The successful teachers all engage in above-average levels of interaction with the pupils. They appear to devote considerable effort to ensuring that the routine activities proceed smoothly; they engage in high levels of task statements and questions, and provide regular feedback At the same time, they also encourage the children to work by themselves towards solutions to problems. The majority make above-average use of higher-order interactions, including statements of ideas and more open-ended types of questioning. They also manage to avoid the need to provide children continually with instructions on how to carry out the tasks. This comes about either because they prefer pupils to find out for themselves or because their initial instructions are so clear that there is little need to follow up by further exchanges. These teachers, while using different organizational strategies, and emphasizing certain other specific characteristics of their particular style, nevertheless have in common that they interact with the pupils more frequently than teachers using the less successful styles. Increased levels in the above kinds of teacher and pupil contact appear to be an important determinant of pupils' progress. (p. 199)

Research on Teaching in Developing Countries

If one looks at the research on teaching in developing countries over the same twenty years, it has largely followed the orientations of earlier North American research. Thus, there have been survey-questionnaire studies covering many variables on what teachers do and their backgrounds. The rest of the research has centered on the progressive focus (indirect teaching, discovery learning, and teaching for meaning rather than memory), and on the behavioral perspective of teaching as expressed in the instructional objectives approach and in programmed learning. Hardly any research has dealt comprehensively with the direct instruction mode. The only wide-ranging study that includes elements of this approach and its typical correlational model of research is the International Institute for Educational Evaluation and Assessment (IEA) *Classroom Environment Study* (for a description see Avalos 1982) whose components in developing countries have not been published.

Examining the results of teacher-related research on the progressive focus of teaching, Avalos and Haddad (1981) revealed the following salient features:

- Regional differences appear in relation to "democratic" or "permissive" styles of teaching as opposed to "authoritarian" styles. In Latin America, the democratic style is positively associated with student achievement. Indian research, however, shows minimal positive effects of democratic teachers upon student achievement. No relationship at all was found in studies of this type carried out in three African countries and in Thailand.
- For achieving higher-order cognitive objectives (mostly in the upper primary schools and the teaching of secondary school science and mathematics), discovery learning, inductive procedures, teaching for understanding, project methods, and activity and laboratory techniques clearly are more effective.
- All the research methodologies used fall either in the survey category (with bivariate, and in some cases multivariate, analyses) or in the experimental and quasi-experimental design type. Most of the observational studies used methods of the Flanders type. There is, however, a recent trend (not considered in the review by Avalos and Haddad) toward more classroom studies using a variety of quantitative and qualitative methodologies. An example is the IEA *Classroom Environment Study*, with each of the projects in participant countries (including Thailand, the Republic of Korea, and Nigeria) observed in about fifty classrooms using a modified version of the

observation system employed in the evaluation of follow-through classrooms in the United States (Stallings 1977).

Teacher Characteristics

Much research in developed countries has assumed that if we know how different types of teachers perform and if we can point out what is alterable in their performance and what is not, we will be able, through suitable training schemes, to influence their classroom behavior. Thus, the early history of research includes many studies dealing with the relation of teacher gender, age, experience, and personality traits to teaching behavior and student outcomes. Most of this research, carried out within the limits of the survey designs and using personality and attitude scales, did not yield consistent results and, in this form, has been abandoned.

This abandonment has not occurred, however, in research on teachers carried out in developing countries. To this date, teachers are inundated with questionnaires and attitude inventories attempting to link their personal characteristics to their behavior assessed through teacher self-reports. The review by Avalos and Haddad (1981) indicates that the results have been just as inconsistent as those of the North American research of thirty years ago.

Teaching Experience

Research on determinants of achievement suggests that the length of teaching experience is one of the few important teacher characteristics. The more experienced teachers are, the more their students appear to learn. There is, however, an optimum length of experience span (usually between ten and twenty years) when effects are more noticeable.

Experienced teachers in Middle Eastern countries are more participatory and less authoritarian in their teaching practices. In some African countries, experienced teachers are rated as being more committed to the teacher's instructional role. In Latin America, however, the situation differs in that younger teachers (with less than five years experience) show more of the above traits, but become more authoritarian as they gain experience and, presumably, are less influenced by what they have learned at the normal school. This situation approximates other findings, such as those of Eggleston, Galton, and Jones (1976), who reported that student teachers came closer to the patterns of teachers with more experience as they left behind the influences of their training.

Attitudes, Opinions, and Beliefs

Another teacher characteristic is classroom behavior, conceptualized as the result not only of teachers' specific training skill, but also their interpretative schemes. This characteristic includes their views about students and teaching and their criteria for instructional decisionmaking and dealing with immediate, moment-to-moment classroom events. Different types of research have attempted to examine these aspects of the teacher. Attitude and opinion surveys are still in use both in the developed and developing world, for example, the Teacher Survey Questionnaire, which forms part of the IEA *Classroom Environment Study* (Avalos 1982). From the review by Avalos and Haddad (1981), it is evident, for example, that in India teachers' attitudes correlate to their behavior with respect to teaching, teacher/student relationships, discipline, other teachers, homework, or management. It is also evident that those teachers who favor political democracy also tend to favor indirect modes of teaching.

Teacher Expectations

Following the copious North American research on teacher expectations about achievement (see review by Lockheed-Katz 1973; Averch 1972), several developing country projects have

addressed this issue. These projects reported that negative prejudgment of students (previous knowledge of their ability, subjective evaluation of their intelligence, and similar assessments) results in negative effects on achievement. More recently, ethnographic studies have examined the same issue. A Chilean study (Lopez, Neuman, and Assael 1984) showed results parallel to those of Rist (1978, 1973) concerning the effects of pejorative labeling on failure in the early years of primary school.

Teacher Processing of Information

Research into the way teachers develop their views and process information has been addressed by developed countries within two perspectives: (a) cognitive psychology, and (b) sociological approaches derived from phenomenology and symbolic interactionism. For cognitive psychology, an extensive review by Clark and Yinger (1979) indicates that, as yet, it has not provided much guidance for changes in teacher activities or training. In-depth studies are beginning to shed light on the ways in which teachers think and the forces that shape particular teacher ideologies. In the United Kingdom, Woods (1983) reviewed the literature on the symbolic interaction of teachers from an ethnographic perspective. This research showed that teachers regard the traditional progressive approach as a continuum rather than as an either or position. The research has also paralleled expectation studies in its examination of the role of teachers' labeling of students contributing to deviance. The rationale for this type of exploration of the teacher's point of view is akin to that of Carew and Lightfoot (1979, p. 21) in an enlightening study of four teachers that, in contrast to most behaviorist research on teaching, took account of the sources of behavior that lay in the teachers' personal histories.

> They [the researchers] have been content to represent life in classrooms by describing actions and interaction, and in the process they have often ignored the character, motivations, attitudes, and values of the actors . . . . Teachers are thought of as one dimensional human beings whose behavior is determined by patterns of reward and punishment. They are viewed as technicians who perform specific actions on children, who in turn are seen as essentially passive human beings to be shaped and controlled by powerful adults (p. 21).

To an even greater extent, this criticism can be leveled at research on teaching in developing countries. Only recently have studies within the phenomenological and ethnographic perspectives begun to document classroom life, to examine ways in which teachers conceive their teaching and perceive their students, and to look at what shapes their decisionmaking and their efforts to change. Examples of such studies are found in Brazil (Wrobel 1981), Columbia (de Tezanos, Romero, and Munoz 1983), and Kenya (Nammudu 1984).

Research on teacher perspectives is connected to understanding the conditions for change and reform. Closer scrutiny of classroom life, however, has revealed that what appears to the observer is not always so. Wilcox (1982), for example, reviewed studies of open plan teaching in American primary schools. The studies reported teacher use of control strategies that ran counter to the organizational structure of the schools. Similar findings have appeared in British ethnographic studies (Sharp and Green 1975) and in more structured forms of classroom observation (Galton and Simon 1980). Ethnographic literature in developing countries is beginning to uncover similar differences between assessments of teachers about changes in their classrooms and what is actually observed (Lopez, Neuman, and Assael 1984).

Teacher Training and Research

Before looking at research that has a more specific bearing on the training of teachers, we should consider the philosophy of teacher training and the nature of training programs.

A simplified, dichotomous categorization can be used to assess views about the nature of training. On the one hand, there is the position that training requires a thorough restructuring of the trainee's conception of teaching through epistemological, psychological, and sociological study. Such a restructuring results after exposure to what could be conceptualized as a teaching

model. A teaching model relies on learning theories, such as Skinnerian behaviorism, or on structural cognitive approaches inspired by Piagetian or Brunerian psychology. It might derive from what are called humanistic theories rooted in phenomenology and existentialism, such as those propounded by Paulo Freire or Carl Rogers. Or it might be linked to sociological approaches that borrow from symbolic interactionism or linguistic structuralism. Or it might be related to curriculum theory, such as that contained in the mastery learning approach. Or a model might be pragmatically drawn from empirical research, such as that related to the direct instruction and teaching style approaches mentioned earlier.

On the other hand (and in contrast to the model approach), skill development schemes concentrate on changes affecting one or two major teaching skills. Much of the literature of experimental research on training deals with different forms of skill development: questioning strategies, lesson pacing, cue providing, feedback and praise, the use of time, and so on (Bettencourt, Gall, and Hull, 1980; Anderson, Evertson, and Brophy 1979; Clark and others 1979; MacKay 1979).

Research on training is generally related to one of the model or skill approaches, but to assess this research it is necessary to see how it addresses issues related to the organization of training. External structure refers to the organization of pre- and in-service training, and internal structure refers to the process of training.

The External Structure of Training Programs

Training schemes may be quantitatively evaluated in terms of the numbers of teachers trained or upgraded and of the cost of implementing the program, but they may also be assessed by looking at the changes in the teachers' behavior, changes that can be traced back to the structure of the scheme. Our concern is with this second approach.

Hardly any research in developing countries has examined the effects of the external structure of pre- and in-service training. Although training of some sort is better than none at all, the possession of higher qualifications (more years of training or a university degree) does not appear to bear a clear relationship to student learning (Avalos and Haddad 1981; Husen, Saha, and Noonan 1978). Sometimes, as two Malaysian studies (Beebout 1972; Isahak 1977) point out, higher qualifications may affect the achievement of secondary school students, but not of primary ones. There may be, as in some Latin American countries (Brazil, Chile, and Paraguay), a nonlinear relationship, with major effects at the upper levels of primary school. None of this research, however, illuminates the nature of these effects or explains why they occur.

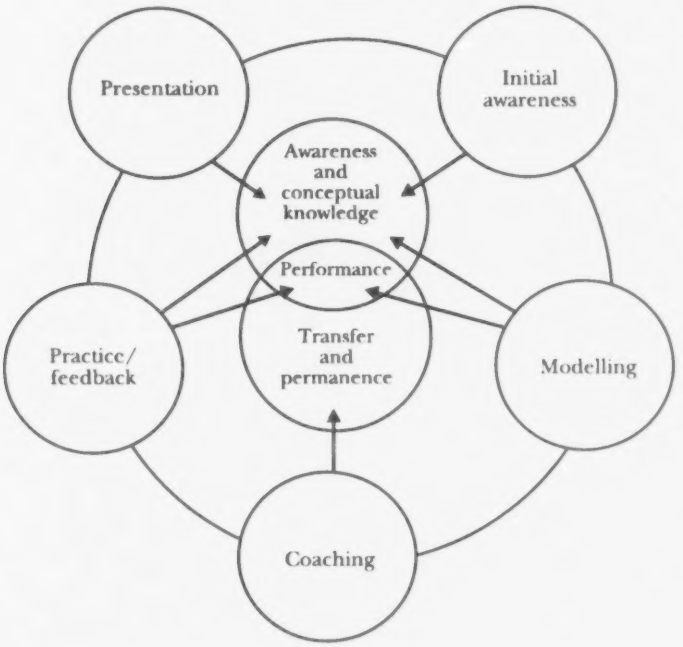
Similarly, no guidance emerges from survey research that has examined the effects of teacher participation in in-service courses. Isolated schemes in the Philippines reported positive effects (Avalos and Haddad 1981). In Chile, however, Schiefelbein and Farrell (1982) found that the massive program of in-service training carried out as a result of the 1965 educational reform did not seem to benefit teachers except for university graduates without training in education. A similar conclusion about in-service schemes was reached in Commonwealth countries, an exception being the highly visible Distance Training Program (Thompson 1982).

The Internal Structure of Teacher Training Schemes

If nothing much can be said about the length, type, and level of pre-service and in-service training, equally little in developing country research sheds light on the process of training. To assess what scattered evidence there is, however, I propose an organizing framework based on what might be considered common to all training schemes: a procedural model for behavioral change.

The framework represents a slightly modified version of the pattern described by Joyce and Showers (1981). As can be seen in figure 12-1, the proposed model portrays training as a circular process that involves changes in the trainees' interpretative framework.

Figure 12-1. Internal Structure of the Teacher Training Process: Components and Outcomes



These changes occur through awareness of the framework's contents and information. Additions to or changes in the teaching repertoire result from a decision to change and a consideration of teaching models. Persistence of changes through time results from practice and the self-examination of such practice and from the support of peers and the trainer during the change process. The components of a training program viewed in this way are outlined below.

1. Initial stimulation of teacher awareness. This component refers not only to teachers' awareness of their philosophy of education and of the characteristics of their teaching practices, but also to awareness of the context in which they teach. A common method of stimulating such awareness is their own or others' practices through observation of live or videotaped teaching. Knowledge of context, including awareness of school and community, can also be achieved through group discussion based on information provided by, for example, student records. Stallings (1981) used teacher profiles, obtained from classroom observations, to have teachers examine and discuss how they teach.

Recent ongoing research in developing countries reports several ways of stimulating teacher awareness in group situations, including written narratives by the teachers about their teaching practices (Vera 1982), narrative scripts and videotapes of classroom processes (Nammudu 1984; Crespo, Baldivieso, and Saldias 1982), or teachers' profiles obtained through classroom observation (Nitsaisook and Avalos 1984).

2. Presentation of information about the chosen model or specific teaching skill. Information can be conveyed through lectures combined with group discussion, or it can be presented through programmed texts, manuals, handbooks, or less structured and less specific scripts.

The content of the presentation should include background information (for example, research reviews), descriptions of skills and models, and problems for structured discussion. Obviously, the choice of a presentation mode depends on the philosophy underlying the training approach. The less structured forms that rely on the teachers' choice approximate phenomenological conceptions of learning, while the more structured forms relate more closely to behaviorist perspectives.

3. Practice or feedback. This component represents a step toward the implementation in classrooms of the teaching model or skill in the training scheme. In this practice stage, teachers and student teachers analyze teaching situations; they look at their difficulties and reach decisions about possible courses of action. If the model pattern or skill is related to specific curricular content, the practice stage might require teachers to develop curricular units and decide on the instructional strategies or to examine existing curricular packages as in project INSPIRE (1980), currently being developed in Malaysia. Studies reported in the review by Avalos and Haddad (1981) indicate the effectiveness in some contexts of micro-teaching, provided that trainees have prior experience and that micro-teaching is followed by teaching in the regular classroom. Feedback is a necessary component of practice, enabling trainees to examine their behavior either on their own or with the help of others. Peer observation—observation of one trainee by another—was used effectively in Stalling's in-service workshops (1977) and by Yarger and Ferris (1981) in summer school sessions with in-service teachers. The same approach was used in an experimental training scheme in Thailand (Nitsaisook and Avalos 1984). Other effective feedback strategies occur (Avalos and Haddad 1981) in Thai and Indian studies where student observation and teacher self-ratings were used.

4. Coaching. Joyce and Showers (1981) consider this component to be essential if transfer to new or different teaching/learning situations is to occur. They define coaching as the "provision of a means of analyzing the teaching situation, determining appropriateness of the skill, the adaptation of it to learners and the adjustment of the skill to a variety of situations" (p. 8). Coaching by a trainer may take place after observation of the teacher's attempts to change a practice, as in Project INSPIRE, which has built into its training scheme what is called the intensive supervision of teachers. Coaching comprises scheduled visits by project staff and others to the schools to give guidance to the teachers and to discuss unclear issues. It also involves active communication between the schools participating in the project and the research team.

Self- or peer-coaching may be achieved by helping teachers to devise self-assessment guides. Those in Stalling's workshops wrote daily or weekly logs of classroom activities that allowed them to reflect on their problems and seek help when needed.

Apart from Project INSPIRE and continued supervision built into other programs in developing countries, no research has assessed the benefits of coaching.

Concluding Remarks

One unfortunate aspect of the scarcity of research on teacher training in developing countries is that research projects have concentrated on particular aspects of training rather than on a comprehensive evaluation of the training process. Even those projects that seem most inclusive—that is, involving teachers' decisions about the direction and assessment of change—focus on only one type of outcome: attitude change. For low socioeconomic contexts where schooling represents probably the only chance to acquire some of the skills needed, the purpose of helping children to learn cannot be overlooked in training schemes. If (as in some of the studies reviewed) that purpose is mechanically pursued without stimulating the teachers' capacity for reflection and creativity, however, the result may be a caricature of sound teaching and distort what knowledge the students may acquire. Ethnographic research in Latin America—particularly that of de Tezanos, Romero, and Munoz (1983) in Colombian primary classes—reveals the distorted usage of the traditional lesson sequencing patterns that teachers

learn in normal schools. To trace the origins of this distortion, de Tezanos (1984) conducted an ethnographic study of one of the Colombian teacher training schools.

Looking toward the future of teacher training research, an essential step is to stimulate teachers to examine their practice. As indicated above, ethnographic descriptions are appearing in some Latin American countries (Bolivia, Brazil, Chile, Colombia, Mexico, and Venezuela), in Kenya, and in Thailand. Their value lies not only in what they tell us about schools, teachers, and classrooms, but also about materials for training. As Ghory (1984) pointed out, one positive aspect of the Stalling's Effective Teaching Practices Programme is that because it begins with the teachers' analysis of their practice, it makes sense to them. For something similar to happen in developing country contexts, it will be valuable to have narratives about classroom practices that result from the ongoing ethnographic work.

Then there are other issues that are not easily resolved. In a number of developing countries, schools and teachers work under much tighter bureaucratic controls than is typically the case in the developed world. Resources and autonomy at the local level are virtually nonexistent, and initiative cannot take place before central permission is granted. In these countries, teachers who strive to implement change may run into difficulties with the authorities that they may not be prepared to confront.

Other constraints affecting teachers lie hidden in the psychological structure of each individual. Conditions of work and salaries are often miserable; nothing to compare with what are perceived as low salaries in wealthier countries. Research acknowledges that these difficulties exist and that they, more or less, affect the outcomes of training and teaching. Little research has been done on how teachers deal with these problems or on what coping strategies they use.

Future research on teacher training will have to consider in a holistic manner the limitations imposed by contextual conditions. This consideration may well indicate that less emphasis be placed on wholesale adaptations of training schemes—for example, the competency-based approach being advocated for developing countries. More importance should be attached to schemes that concentrate on the nature of the change process (as in the framework in figure 12.1), allow teachers to examine reflectively their experience and the constraints they must endure, and enable teachers to receive information and assistance as they plan the course of their practice. In other words, what is needed is attention to the training process in its relation both to teacher awareness and willingness to change and to the provision of information. Such information is valuable only if it is presented as a choice and not as a prescription. Its purpose should be to aid teachers in deciding what to use in order to structure their practice for their students' benefit.

In conclusion, research into evaluating training schemes will have to come closer to the case-study approach. It will have to be less bound by the "universal" type of study (which responds to statistical requirements for generalizability) and pay more attention to what Cronbach (1975) has to say about such studies:

> The goal of our work . . . is not to amass generalizations atop which a theoretical tower can someday be built. The special task of the social scientist in each generation is to pin down the contemporary facts. Beyond that, he shares with the humanistic scholar and the artist in the effort to gain insight into contemporary relationships, and to realign the culture's view of man with present realities (p. 126).

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13

PARTICIPATORY APPROACHES TO TEACHER TRAINING

Sheldon Shaeffer

The Impact of Reform and Expansion on the Quality of Teaching

The two most common characteristics of education in the developing world are a leap in the quantity and a deterioration in the quality. As enrollments increase, new schools are built, new textbooks are published, and new teachers are hired. Because such expansion requires money, the education system is held more accountable by public officials and parents, both to achieve certain political and economic ends and to sort out those students best able to contribute to national development. Changes are, therefore, introduced in the shape of new, more selective examinations. While these various investments and reforms are meant to increase the quality of education, they often result instead in education that is less effective.

This downhill process occurs in several ways. As governments push to expand their education systems, more children are attracted to school. Despite more classrooms, available space does not keep up with the enrollment of new students. Teacher-student ratios increase, and schools (and often teachers) move into double or triple shifts. New courses are designed to make them more appropriate for local conditions, more relevant for rural children, or more vocationally- or politically-oriented. These may include woodworking and cooking to develop pre-vocational skills; civic or moral education to enhance political consciousness; local music or literature to strengthen cultural identity; local languages to permit an easier transition to the language of higher education; or a foreign language to ease entry to that higher education. Each of these courses will need new syllabuses, textbooks, equipment, learning materials, and teaching methods. The demand for a limited supply of places at higher levels of education also leads to new examinations, more and more of which need to be passed for selection into the next level.

As systems expand, so do bureaucracies. New layers of supervision are introduced, and new kinds of information must be collected and transmitted higher up the system. As education begins to cost more and to assume a higher profile in the development process, contacts between the school system and other organizations also increase. Parents become more active in monitoring their children's education; government officials and legislatures look more closely at the impact of increased investment; and special interest groups (religious, ethnic, class-based) begin to see schools as battlegrounds for their particular objectives.

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It is teachers who are in the middle of this battleground. They are considered by school officials to be the key to delivering effective education; by parents and students to be the source of individual success; and by the ministry to be the frontline implementors of educational reforms. These expectations only make more difficult the challenges that rapid expansion of the system poses.

- As the development budget is increased to build a larger education system, the routine budget for salaries and other teacher supports may suffer. As budget items such as school maintenance and supplies increase, salaries are squeezed. Pay raises are restricted, monthly payments may arrive late (if at all), and the gaps in salaries among primary, secondary, and tertiary education teachers may grow larger. The pressure for finding supplementary work—as a teacher in a private afternoon school, as a tutor, or in farming or small business—grows.
- New courses, syllabuses, texts, and materials must all be mastered, particularly by teachers who teach all subjects across a grade level. Much of the new content (modern math, inquiry science, foreign languages) may be far removed from the ordinary teacher's knowledge and experience.
- Higher teacher-student ratios and new subject matter also call for new teaching skills, such as the ability to work with large groups, to ask different kinds of questions, and to encourage active learning.
- Larger, more heavily layered systems complicate a teacher's life with greater accountability, more supervision, and more recordkeeping. Principals and teachers alike may spend a considerable amount of time responding to district, provincial, and national demands.
- Pressures also result from greater interference from outside groups. Teachers are told to follow the syllabus, to teach to the test, to produce more successful graduates, to pay more attention to the needs of particular types of students, and to get involved in local development activities and perhaps local politics as well. Yet the teacher often lacks the training and the status to respond successfully to such pressures.

Teachers are expected to face these pressures—economic, academic, pedagogical, structural, social, political—in isolation and with little guidance. Once trained—or once put in a classroom without training—they often work without reinforcement (negative or positive), with little supervision from their superiors or help from their peers, and with little motivation or opportunity to change or improve their teaching. One reason for this situation is the inability of the teacher training systems of the developing world (and much of the developed world as well) to respond to the difficult task of training teachers to handle an increasingly complex process within an increasingly complex context. These systems are not providing teachers with the skills needed to master new content and subject matter, to learn appropriate and varied teaching methods, and to face the variety of pressures that confront them both inside and outside the school. Despite evidence that shows that effective teaching practices differ by subject matter and grade level (Education Testing Service 1976), current training systems often try to reduce training to standardized teacher-proof activities and a discrete and common list of teaching skills. In crudest terms, the training of teachers is designed to produce "technicians" rather than "professionals."

One reason for this is that teacher trainers—both bureaucrats and professionals—are distracted by a number of very practical dilemmas and either-or choices. The most obvious of these (as in education systems in general) is that of quality versus quantity. What kinds of teachers should be trained first and in what numbers? Should qualified teachers be upgraded to higher standards or unqualified ones to minimum standards? Should all teachers be provided with quick and dirty exposure to new course material or only the best or the most experienced teachers or only principals and inspectors? Given limited funds, should pre-service training be extended at the expense of in-service, or vice versa?

Another dilemma concerns the balance between theory and practice, between college and school. Is training (in-service or pre-service) a time for theories of child development, learning processes, cognition, and culture, or is it best devoted to practice and to the living reality and problems of the school? If practice becomes the dominant focus, then should it emphasize subject content—the mastery of integrated science, of a foreign language, of modern mathematics—or more general teaching skills and competencies such as questioning, cueing, testing, and reinforcing?

What is becoming more and more obvious in the debates about these choices is that none of the current approaches to teacher training is a panacea. In this paper, however, another alternative is presented, one that might be used, perhaps in combination with others, to overcome some of the isolation teachers now face and to provide them with the skills needed to teach in increasingly difficult and complicated circumstances. This alternative is one that emphasizes the teachers' and trainees' active participation in the training process. This alternative is no more of a panacea than the others. In fact, many questions arise concerning its potential and actual impact on the quality of teaching. The approach is different enough, however—and even promising enough in some cases—to warrant consideration.

Approaches to Teacher Training: The Participatory Alternative

As a result of the contemporary pressures on teachers and on teacher-training institutions, a number of quite different approaches to training have recently been developed. Most still emphasize—in different combinations and proportions—a mixture of content and skills training and of college lectures and teaching practice. The literature is filled with descriptions of planned or ongoing training courses, both pre-service and in-service, of varying length and depth. Most of them, however, share one characteristic: the trainee as the empty vessel, the passive recipient of new content, new methods, or both.

Such training is top-down and prescriptive, the implication being that teachers are deficient in some particular knowledge and skills, that trainers and administrators understand the teaching process better, and that therefore certain teacher-proof lessons must be transmitted to new and practicing teachers. Lanier (1984) calls this mere teacher training rather than professional teacher education because it is all form and no substance. It focuses on practical know-how and has no faith in teachers' judgments.

The major debate in the literature concerns the relative emphasis in training placed on academic improvement in a particular subject area or on practical skills in teaching, in other words, on what to put into the empty vessel. The most repetitive characteristic of this debate is that which contrasts the teaching of new skills and the inculcation of a new conception of teaching; what Avalos (1985) calls the skill development and the model approaches. The former concentrates on changes in discrete teaching behaviors (questioning, the use of time, lesson planning, and so forth), the latter on "a thorough restructuring of the trainee's conception of teaching on the basis of epistemological, psychological, and sociological considerations" (1985, p. 294). This leads to models based on various learning theories (such as behaviorism), humanistic theories (phenomenology), sociological approaches (discourse analysis), curriculum theory (mastery learning), or empirical research (direct instruction). Whatever the specific side chosen in the debate, proponents assume that the body of knowledge related to it must be transmitted from tutors to teachers. This leads to programs based solely on lectures, tutorials, and demonstration lessons. It also leads to an overemphasis on evaluating the success of training programs in terms of "skill formation, cost, and implementability" (Haddad 1985, p. 51).

Quite a different approach is represented by what might be called participatory teacher training. This is not a clearly defined approach; rather, it has a number of general characteristics, some of which overlap with other, more traditional approaches. First and above all (and in contrast to other approaches), it is one in which the teacher plays an active role in the training process. Instead of being a passive recipient of others' accumulated knowledge about methods and content, the teacher becomes a participant in decisions about the needs to which training must respond, what problems must be resolved, and what skills and

knowledge must be transmitted. The teacher becomes an agent rather than an object of change, the assumption being that the "most effective learning occurs when the learner is treated as a constructor of his or her own knowledge and given the opportunity to share responsibility for the selection, prosecution, and evaluation of the tasks through which knowledge and competence are acquired" (Wells and Chang 1986).

Second (and as a result of this participation), training becomes self-directed and the teacher self-taught. The autonomous position of the teacher in the classroom is recognized in the training itself as he or she is encouraged to assess problems and to design and experiment with appropriate solutions. Russell states the argument clearly: "Only teachers can teach themselves to teach" (1985, p. 4). In one teacher training program in India, for example, trainees teach themselves child psychology by observing children at play and work (Goad 1984).

Third, this self-directed training is based on reflection and introspection. The teachers' needs, problems, status, roles, and so forth are not presented by outside experts (the supervisors and trainers), but are defined, examined, and analyzed by the teachers themselves. Such "reflection-in-action" (Schon 1983) is meant to lead to greater self-awareness, with teachers learning to seek explanations for—and possible solutions to—their problems by looking into their own situation and practice. This is similar to Elliot's self-monitoring, the "process by which one becomes aware of one's situation and one's own role as an agent in it" (1976–77, p. 5). Teachers, in other words, have skills, beliefs, and styles of their own, not valueless, but a craft knowledge worth further assessment and analysis. They "know a great deal about teaching, and when given the time to reflect on their practice, they can bring about positive change in their classrooms" (Institute for Research on Teaching 1986, p. 3).

Fourth (and lest this seem all too abstract), participatory teacher training is meant to base this introspection on the actual, concrete experiences of working with children in classrooms and schools. It is not generalities or universals that are examined—so often the case in college-based training—but rather the particular problems of the teacher arising from a particular situation faced every day. In some cases, this situation may go beyond the school to include local, community-related activities and wider critiques of the nature of the education system itself (Vera 1982, pp. 4–7).

Finally, such participatory training—though based ultimately on individual reflection, autonomy, and action—is often structured by a group. Teachers collectively examine and analyze their experiences—assisted by trainers working more as facilitators and resource persons rather than experts—and so cooperate in solving problems and learning from each other. Hunt (n.d.) has called this a "persons-in-relation" approach, wherein a group or network of teachers is responsible for planning its own in-service activities.

In essence, then, in this kind of teacher training, the *process* of learning and of change becomes as important as the *product*, and the personal development of the teacher as important as the improvement of professional skills. Training becomes an integral and permanent part of teaching.

The outcomes expected from participatory teacher training relate closely to its characteristics. The teacher who learns to be actively in control of his or her own learning becomes empowered, self-reliant, self-confident; a more active agent of change (Goad 1984, p. 143). More autonomous teachers take responsibility for what is learned and what is taught not only at the moment, but also throughout their professional lives. Greater teacher "autonomy in decisions regarding the learning and teaching process furthers their sense of responsibility in regard to their development" (Vera 1982, p. 3). Teachers better able to reflect on their own particular situation, problems, and roles modify their frames of reference in terms of the educational process and become more sensitive to the myriad of factors affecting their school experiences; student failure, for example, can no longer be assigned only to student weakness. Training based on actual experiences and actual needs leads to real skills, in lesson construction, materials development, or more cooperative (perhaps even more democratic) attitudes, so that teachers may prove more willing to fight against the isolation and atomization that the self-contained classroom so often imposes.

Out of all this is meant to come a more motivated, professional teacher, more open to new ideas, more innovative in trying out new methods. Through participatory training in which teachers become active, autonomous learners with new knowledge based on real experience and collective effort, they should also acquire the kind of alternative learning processes that they will practice in the classroom. Thus, those trained to be teachers "should participate actively in their own training and should experience the kind of education that they themselves will practice" (Goad 1984, p. 121). "When teachers themselves experience this mode of learning, they are more likely to be convinced of the need to implement it in their own classrooms" (Wells and Chang 1986, p. 1). Avalos and Haddad also found evidence that more participatory training methods (for example, micro-teaching, role playing, interaction analysis) "appeared consistently effective in promoting changes in teaching techniques" (1981, p. 33).

Methods of Participatory Teacher Training

A variety of methods and approaches on how to achieve the kinds of objectives that we have been considering are discussed in numerous reports, articles, and other documents. Few of these explicitly recognize something called "participatory" training; other labels are used instead. In reviewing the literature on examples of such training, however, a few basic categories emerge. These include cooperative learning aimed at curriculum development, reflective self-instruction, training by simulation and situation, and the teacher as researcher. While these methods may also be used in pre-service training, the discussion that follows focuses more on their use in in-service training, the premise being that experienced teachers will bring to such training both a basic knowledge of educational theory and practice as well as considerable experience of classroom life.

Cooperative Learning

In this approach to participatory teacher training, teachers and trainees work together to establish needs, identify problems, suggest and evaluate possible solutions and, in so doing, develop new curricula, syllabuses, methods, and texts. Such an approach has been labeled the curriculum development approach to teacher training (Greenland 1983). It is meant to produce new products (materials, methods), greater skill in using the products, and because of the participatory process a greater sense of responsibility and efficacy. It invariably focuses on practical problem solving and permits teachers to learn from each other's experiences and to participate in training as they construct curricula, organize syllabuses, and write material.

What is important here is that teachers are not merely placed on the occasional subject panel to comment on the readability and validity of new content, are not taken out of their classrooms on full-time secondment to curriculum development institutions, and are not deposited in a classroom to be told about the newest variety of mathematics curriculum written in the metropolis. Rather, in recognition that curriculum change is a daily occurrence, they, as practicing teachers, are involved in curriculum development and change, and trusted to do so.

Two rather different approaches to cooperative learning are teacher centers and teacher workshops. Teacher centers are usually places (model schools, district offices, training colleges) where practicing teachers come for guidance, training, and information. Most are quite traditional in orientation, with experts on hand to provide more or less formal courses on new curricula, texts, and equipment and to handle specific problems of individual teachers. Others, however, are more participatory, with teachers meeting in small groups, becoming actively involved in discussing classroom experiences, proposing and experimenting with new methods, and writing locally based materials. (See the Center for Educational Research and Innovation studies of the Australia, Italy, Netherlands, United Kingdom and United States, and for detailed reviews of such centers in the developed world, OECD 1978.) Teachers are brought into contact with other teachers, and through such contact and cooperative work isolation may be overcome and self-regard and commitment increased.

The most commonly described centers in the developing countries have been the Teacher Advisory Centers in Kenya, where teachers cooperate in developing their own instructional material and familiarizing themselves with new course books in the local setting (Greenland 1983; see also Haddad 1985, pp. 59–60; Ayot 1983). Similar projects have been described in Botswana (Molomo 1983) and Nepal, (Young 1985).

Another curriculum-related approach includes more informal teacher clubs, clusters, or workshops. These are often completely school focused, where most or all teachers in a school meet to define needs and experiment with solutions in relation to that school's particular policies and context. Teacher clusters in Thailand and School Learning Action Cells in the Philippines reflect this approach (Asia and the Pacific Program of Educational Innovation for Development 1985, pp. 18–25). The expectation behind such activities is twofold: the development of new and appropriate teaching practices and the encouragement of more cooperative and innovative attitudes within the school.

These clusters or workshops may also be established across schools, for example, from among particularly interested teachers in a given district. The Cianjur project in Indonesia does this (Hawes 1982) as, to some extent, does the Pakistan-German Basic Education Project (Bude 1985). One principle of such projects is that teachers develop a new method, try it out in classrooms, and then report back to the group on its success.

A particularly interesting version of the teacher workshop is one developed through a network of research/action centers in Latin America. First begun in Chile and then adapted in Argentina, Bolivia, and Uruguay, and these workshops begin with the assumption that to transform the performance of teachers in the classroom, it is necessary they understand the authoritarian and dogmatic role they currently adopt toward their students. Teacher training becomes not a series of discrete courses, but rather a "permanent critical analysis of teaching practices and a permanent process of innovation and improvement" (Vera 1982, p. 16).

Teachers, usually from several schools, are grouped in workshops to develop their abilities to analyze critically their own teaching practice so as to facilitate the development of more participatory and research-oriented forms of learning and teaching; to work in a group; to do research and experiment within their own learning and teaching setting; and to analyze the factors that influence social change (Vera 1982, p. 21). With the help of a facilitator, but largely through collective effort, teachers critically analyze the role assigned to them by the government, the role they enact in class, and the role that they actually want to play.

Though methods vary, teachers are generally either observed by peers in classrooms or observe themselves through videotapes; they write about, discuss, and use role plays of daily incidents to analyze their assigned and enacted roles; they carry out a small piece of scientific research; they develop new and simple materials for teaching; and they try out new approaches in the classroom. The most important part of this process is the stimulation of the "teachers' awareness of the context in which they teach" (Avalos 1985, p. 295). They also analyze extensively their own ability to work within the alternative, collective, nonauthoritarian, and nondogmatic style of the workshop, and then to transfer this style to the classroom.

One further note on this collaborative approach to participatory training: such collaboration can go beyond the school into the community. A project in Bangladesh attempted to do this through focusing on training experiences of both teachers and their students in the village (Duncan and Löfstedt 1982), and Dove has proposed a rural challenge model of teacher training that is field-based, structured by teams, and involves the local community in the training of local teachers (1982). The Bunumbu project in Sierra Leone is often cited as an example of such work.

The important aspect of all these projects is that the training is generally meant to be field-based (in the school and community) and collaborative (among teachers, trainers, students, the community, and even administrators). Such an approach, Dove argues, revolutionizes teacher training because "teamwork involving all who work in or on behalf of the school becomes essential to the coherence, meaning, and efficiency of the program" (1982, p. 25).

Reflective Self-Instruction

The second general participatory approach is based on self-instruction, often through some form of distance education (radio, correspondence courses, self-instructional modules, and so forth). This kind of education is participatory when it encourages a learner to become autonomous, self-reliant, and active in learning and then to reflect on this learning, not when it presents a cookbook of skills or knowledge to be memorized and then checked against a key. Radio courses that simply give new information to practicing teachers are merely refilling the vessel with modern technologies.

One form of self-instruction includes manuals, modules, and guides. These may be used as part of a more formal group course or by individual teachers. An example is the Teacher Preparation Packages developed by five southeast Asian countries in a project coordinated by the Southeast Asian Ministers of Education Organization (SEAMEO) Centre for Innovation and Technology (INNOTECH) in the Philippines (Tugade and Winario 1986). The content of these packages (devoted to "nontraditional" teaching) varies by country, from lesson planning in Indonesia to teaching English as a foreign language in the Philippines and mathematics in Malaysia. Teachers were heavily involved in the design and testing of these modules, and in those countries where they are still much in use (Thailand and Singapore), they require the teacher to take responsibility for systematically reading, reviewing, and correcting the lessons presented. Only in Thailand, however, are some of the modules designed specifically for use in small groups, and it is perhaps no coincidence that Thailand has had the greatest success with these packages.

Another project that uses modules as part of a more integrated training method is the Universal Primary Education project in Bangladesh, where the school-based cluster training of teachers—designed to increase their motivation and involve them in group activities as well as improve their performance—is complemented by modules that cover real-life situations (Basu 1985). Both this and the INNOTECH project require the active reflection of teachers about their own practice.

Other kinds of self-evaluation and introspection have been tried. In the Chilean workshops teachers describe and analyze such aspects as a typical school day, the most pleasant and unpleasant experiences of their careers, and the roles assigned to them by students and by parents. They often employ role playing (Vera 1982). A project in Malaysia has teacher trainees progressing from brief comments to more specific observations and critical analysis (Sultan Indris Training College 1985).

As mentioned, various distance education methods can also fit into this category of reflective self-instruction. Correspondence courses, study guides, radio and television lessons have all been used in this way, some, of course, being more "reflective" than others. These methods focus largely on upgrading teachers in basic knowledge and specific skills and often complement residential courses: the Zimbabwe Integrated Teacher Education Course (ZINTEC) course in Zimbabwe through correspondence courses (Sibanda 1981), a Tanzanian project through radio and cassette programs (Chale 1983), and a Kenyan project through both of these, as well as study guides and textbooks. In the Côte d'Ivoire, also, a distance education process of auto-formation encourages groups of teachers to organize their own learning and to seek solutions to particular problems (Goad 1984).

Training by Simulation and Situation

The third common approach is based both on simulation and situation, namely, training that is grounded in practical, school-based situations, but that also simulates these in ways that compel the trainees to become active participants. Role playing is an example, with teachers playing out roles as students, administrators, or teachers (Vera 1982). Another is case studies of particular problems or critical incidents. Micro-teaching is appropriate *if* it is used not merely to fine-tune teachers in some predetermined skill or move them toward some ideal image of a

teacher but rather to encourage them to reflect on their performance in particular situations. Many of the projects previously discussed use these techniques.

The Teacher as Researcher

Perhaps the most participatory of all is research itself: the teacher as researcher. Many of the aspects of participatory teacher training come together in this process: action, autonomy, self-direction, reflection on concrete reality, sometimes collaboration. But how does the act of research relate to the process of teaching? An International Bureau of Education (IBE) study has one response, quoting from Slastenin:

> Educational activity is creative by its very nature. In attempting to solve the countless recurring and new educational problems that arise, a teacher, like any research worker, arranges his activity in accordance with the general rules of heuristic investigation... (He) analyses the educational situation, planning the result he hopes for by comparison with the initial data, analyses the available resources for checking his initial hypothesis and achieving the desired result, works out the actual process to be used in teaching and puts it into effect, evaluates the data obtained, and defines what must be the next stage. (IBE 1979, pp. 6–7)

Training in the methods of research, because of its similarity to the process of teaching, helps teachers to structure and to focus their work more systematically.

Wells and Chang take another position. Teachers, they believe, "already have a practical theory of teaching; without such a theory, they could not make the many decisions... required of them on any day in the classroom." But these are "implicit and unconscious... not easily amenable to self-determined evaluation and improvement.... If teachers learn to make sensitive observations of their own and their children's behavior (learning processes and patterns), they will be led to make their theories of learning and teaching more explicit and so available for... critical examination... [which] may thus lead to teachers questioning their theories of instruction and modifying their classroom practices" (1986, p. 2).

Beeby puts it best, perhaps: research by teachers helps to make teacher training more realistic, sensitizes teachers to the need for changing some routine practices, and makes them more professional (1977–78, p. 11).

There are various ways in which teachers can become involved in research. They can be consumers and experimenters, weighing research findings in terms of their classroom applicability (Eaker and Huffman 1980). More easily, at least in the developing world, where research results are not readily available, they can become researchers themselves. They can learn to observe others; then become able to observe and monitor their own practice and so improve their teaching continuously throughout their careers (Brophy 1979). They can learn to test their children, not only to check knowledge, but also to diagnose problems (Gardner n.d., p. 185), and they can learn to examine the outcomes—both intended and unanticipated—of their work.

None of this needs to be highly sophisticated research. Aarons tells of a project in Papua New Guinea where she helped teachers and elementary school children together to collect data on what the children ate at home and at school. This research led to community and school action projects to improve local diets (Aarons 1981). In another study in Portugal teachers did simple research on the causes of high repetition rates (Pedro 1984).

To the extent that teachers are doing this research in partnership with trained researchers, we can talk of genuinely collaborative research: the teacher as active partner rather than passive informant. Such collaboration can be of great benefit to the professional researcher, combining the first-hand experience of the insider/practitioner with the theoretical and methodological skills of the outsider/observer (Wells and Chang 1986; Florio and Walsh 1978; Shalaway and Lanier 1978). It can occur in various ways, through the informal sharing of results from earlier research (Florio-Ruane and Dobarich 1984) or the observation of children, the more formal meeting of collaborators to explore the implications of their observations and

experiences, and the more systematic exploration of a particular problem (Wells and Chang 1986). The second and third of these are particularly important.

Teachers can be encouraged and trained to explore the methods and results of their teaching. To the extent that this is done in collaboration with a researcher likewise in pursuit of understanding (and not a trainer who already claims to understand), the teacher is recognized as a reflective being and is involved as an active researcher.

The Institute for Research on Teaching in Michigan developed a project where

> Classroom observations, videotapes, and project meetings were used to facilitate the teachers' reflections. In conjunction with weekly observations, three teachers and six researchers exchanged journal entries about the observations. Teachers gained insight into their practices by viewing videotapes of classrooms and further defined the project's goals in team and group meetings (1986, p. 3).

An excellent example of this approach in the developing world is a project that was carried out in Kenya over four years and that brought together a small group of secondary school teachers with a university lecturer to examine teaching problems, discuss teaching roles, analyze teacher motivation and performance, and experiment with different teaching methods.

Teacher research participation in this study was envisaged at four levels. First, teachers were to plan and undertake some of the logistical aspects of the research project, such as collecting data from students in their classes, rating the quality of their own lessons, and making themselves available for pre-active teaching interviews and other more general interviews. Second, the teachers were to participate in seminars with teachers from other schools and undertake reflective discussions. The two main topics were the factors within their school environments that might affect their work and their own teaching practices as observed from video and audio recordings of their lessons. Third, the teachers were to identify areas of practice that they felt they needed to improve and, using both their own ideas as well as those of their colleagues, implement observable instructional techniques designed to improve selected teaching strategies. Lastly, the participating teachers were to share their research experiences with other teachers to encourage the development of dialogue within the teaching force with a view to improving the quality of their practice (Namuddu 1986, p. vii).

Audio- and videotapes were used to record teaching practices, and extensive interviews with the teachers and others in the school were undertaken to clarify the context in which the teaching occurred. All of this became data and then proper grist for the mill of small meetings of the teachers/researchers. Discussions were frank and wide-ranging: points of view were clarified, attacked, and defended; behaviors (even seemingly unimportant ones) were dissected and explained; and alternative methods were tried out. Namuddu concluded that:

> The processes of learning together which the teachers and myself attempted were in themselves a learning experience. Certainly, the procedures that led the teachers to identify needed change in their own instructional strategies revealed to them the nature of their "live" work. The video tape was a particularly powerful aid in getting teachers [to] see and hear what a teacher "is normally saved from"—his own teaching—thus precipitating the desire to make some changes and the efforts to change.... These efforts were very useful and worth the effort and the high financial and psychic cost, perhaps even more important than the change in instructional strategies that we observed and were told about, since it wrought overall changes among the nine teachers, particularly in the way they perceived themselves as teachers, as professionals and as participants in the dynamic societies of the school and the nation's educational systems as well as in the cultural life of Kenya (1986, pp. 122–123) .

More systematic exploration of particular predetermined problems can also be done: the causes of repetition, the diets of children, the problems of reading or writing. An example of this is a project carried out at Milton Margai Teachers Training College in Sierra Leone, where a dozen lecturers are paired with an equal number of secondary school teachers to explore collaboratively a range of problems ranging from the teaching of local art to dropping out of the

teaching profession (Wright 1985). In one particular case, teachers were trained for a new integrated science program in a traditional "cookbook" style. This was generally considered a failure. During later training, which was more collaborative, teachers and researchers outlined, elaborated, and analyzed a wide range of problems and worked out solutions to some of them (Wright, personal communication). A further example occurred in Lesotho where five developmental studies teachers worked with a university researcher in describing and analyzing classroom practice. Awareness of classroom processes was sharpened, and the teachers gained insight into learning problems, added to their repertoire of skills and strategies, and increased their confidence and morale (Stuart and others 1986).

Beeby urges that such collaboration go even further, to bring together on a common task all the individuals and agencies in a particular area whose job it is to keep education "alive and growing," to investigate local problems, and "then to ensure that there is a way for their considered findings and conclusions to get through to those who make national policy" (Beeby 1977–78, p. 11).

What kind of changes might one expect for teachers experiencing the teacher as researcher program? Wells and Chang believe they become "informed professionals whose decisions are grounded in more accurate understanding of the different variables that may be operating in particular learning and teaching situations"; they develop, in other words, a "theory in use" (1986, p. 11). The Institute for Research on Training project concluded:

> Seeing their practice through outsiders' eyes, the teachers became aware of possibilities beyond the district curriculum and the established models of teaching and classroom structure. Changes occurred in how they structured classrooms and allocated instruction and how they redefined the task of teaching. Challenging what they once had perceived as constraints, they were able to seek answers and solutions to teaching dilemmas that were informed by their professional knowledge (1986, p. 3).

Constraints to Participatory Training Methods

Participatory methods are already being used—often unconsciously—by teacher trainers throughout the world. Such use, however, is usually sporadic, atheoretical, and unevaluated. More should be attempted, and many problems remain before such methods become common in the developing world.

First, it is clear that this kind of training is labor and time consuming. Small group work, reflection, discussion, self-learning, action research; none of these is particularly fast, efficient, or cheap. Where hundreds (if not thousands) of teachers need to be trained quickly in a new syllabus or a new method, these approaches will not work. Also, not all teachers are willing. Many feel uncomfortable with group dynamics, self-analysis, and consciousness raising. Others, especially in the poorer parts of the developing world, simply don't have the time or energy, and their salary levels rarely motivate them to experiment with new and often complex methods.

Second, government bureaucracies (ministries of education included) are frequently rigid in their posture and constrained by serious structural and financial problems. Teacher training institutions are burdened by the same problems and are dominated by staff more comfortable with traditional training processes. Schools also—and the administrators and inspectors who control them—are often unsympathetic to change.

One can also argue that the kind of school-focused, self-actualizing, empowering nature of participatory training may, in fact, be based on a Northern (or Western) premise that teachers are, and should be, professionally autonomous and that schools have, and should have, a well-established climate of professional attitudes in which teacher initiatives are expected and encouraged. However, in many societies they are expected to be part of—and therefore subservient to—a much larger system, with its own particular goals, mores, and norms (Bude and Greenland 1983; Greenland 1983). In such places, new initiatives are not particularly

welcome. The result in Chile, for example, has been a focus on more receptive private schools and on working with individual schools rather than the government bureaucracy.

Another problem is that participatory training often stops at raised consciousness, at newly-felt efficiency, and at higher motivation. It may not provide enough content, methods, and direction to help teachers deal with the "effects of poor material conditions of teaching, of pupil learning difficulties, and of an often miserable wage structure" (Avalos 1985, p. 297). Nor does it always move beyond attitude change into providing clear-cut evidence about benefits to the children to whom teaching is directed, and even if it does lead to changes in individual teachers, one cannot guarantee that these teachers will be able to practice the results of their training in a system based on different assumptions or transfer the results to a regular school setting, especially if the school itself does not provide a "culture of mutually reinforcing expectations and activities" (Haddad 1985, p. 47).

These constraints, however, should not stop the attempt to make teacher training more participatory. Teaching is now become more than ever before a complex, difficult task, and even more innovations are being developed to make teacher training systems better able to prepare qualified teachers. The World Bank's recent review of its experience in teacher training mentions a few of these: distance teaching, "ripple" or "echo" systems, mobile tutor teams, resource facilities, and so forth "to provide teachers with continuous input and to help central education staff develop materials that respond to teachers' needs" (Haddad 1985, p. 48).

As Greenland concludes, the teachers he studied "wanted to be more involved in the courses they were taking. They were offended at being subjected all the time to lecturers and at being treated as if they were school-leaver trainees" (1983, p. 110). Thus, the use of more participatory approaches within whatever structure of training is created should be increased. Colleges can slant "their training curricula to the acquisition by future teachers of abilities enabling them to participate in active research and in the utilization of the results of research" (International Bureau of Education 1979, p. 17). As Avalos suggests:

> More importance should be given to schemes that (a) concentrate on the nature of the change process ... (b) allow teachers to examine reflectively their experience and the constraints they must endure, and (c) enable teachers to receive information and assistance as they plan, over a period of time, the course of their practice. In other words, what is needed is attention to the training process in its relation to teacher awareness and willingness to change, as well as in its relation to the provision of information. Such information is valuable only if it is presented as alternatives for choice and not as prescriptions. Its purpose should be to aid teachers in deciding what to use in order to structure their practice for the benefit of pupils (1985, p. 297).

In this way, teachers may, indeed, learn that teaching is a life-long learning process, requiring action, self-awareness, autonomy, collective learning skills, and problem solving skills. As they do so, they will become "agents of change rather than simply patients and will come to recognize that their professional development is an ongoing process of active observing of and listening to children, and of interpreting what they see and hear.... Teachers begin to learn from their students, seeing them to be the most important resource for their continuing growth as professionals" (Wells and Chang 1986, pp. 12–13).

Further Areas of Research and Discussion

The above discussion leaves many questions unanswered. Several of the examples used to illustrate aspects of participatory teacher training were based on project descriptions written at the commencement of the innovation rather than on evaluations written at the end (let alone some time after the pilot project officially came to a close). It is now clear that some of the examples cited—for example, the Kenya Teacher Advisory Centers and the Bunumbu project in Sierra Leone—have not achieved their original goals, and that many of the constraints mentioned above did, in the end, seriously weaken the effort. Such projects were too ambitious,

too simplistic, perhaps too dependent on their experimental nature. Whatever the reason for their failure, many of the data available about these projects are now out-of-date and suspect.

So two kinds of further exploration appear necessary. The first is a study into the participatory process itself. Now more and more commonly touted as an alternative to traditional development processes—whether it be in teacher training, rural development, or primary health care—both this process itself and the increasingly cautionary reactions to it are in danger of becoming fads. More systematic research into participation—what it can and cannot do, in what circumstances, and in what ways—is therefore needed.

As for participatory teacher training itself, more (and more extensive) descriptions and evaluations of various projects are necessary, both of those once regarded as exemplars of the approach and of those more recent. These might be case studies of ongoing activities, some of which are already available as project reports (Namuddu 1986; Wright 1985; Vera 1982), but not yet as systematic assessments. Others might be actual experiments contrasting participatory training with other approaches in terms both of process and outcomes.

The need for such studies of purely participatory projects should not obviate the importance now of encouraging more participatory approaches within traditional teacher training, both pre-service and in-service. Many of the characteristics of these approaches are paid lip-service and could be more seriously and effectively carried out. At least some of the goals of participatory teacher training might, therefore, be achieved in the short run while the more complex and still obscure nature of the process as a whole is studied further.

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14

THREE SCENARIOS FOR THE FUTURE OF TEACHING IN THE UNITED STATES

Arthur E. Wise

Teaching in the United States is at a turning point, and there are several possibilities for its future. Will teaching be an occupation that reduces standards whenever demand exceeds supply, regularly scrambling to fill its ranks with whomever can be found? Will teaching become a two-tiered occupation consisting of specially educated professionals and unprepared, transient practitioners? Or will teaching be a profession that guards the academic standards of training programs and the practical competence of its members, thus engendering prestige, compensation, and working conditions good enough to attract and retain talented individuals? The future of teaching will not simply happen; it will spring directly from policy decisions that are being made today at the local, state, and national levels. Before discussing policy choices, however, let me make my premises clear.

- In the United States, a general shortage of teachers is developing; the teacher supply will not be adequate to meet the demand unless steps are taken to attract and retain more people. Current trends will produce a shortage.
- The academic ability of teachers will continue to decline unless teaching is made more attractive to bright young people and entry standards are enforced. Academically talented college students are not currently attracted to teaching.
- Public confidence in the quality of teachers will depend on the perceived quality of teacher training programs and on the standards for entry to the profession.
- The law of supply and demand will operate to set teachers' salaries. If standards for entry to teaching are low and many applicants are judged qualified to be teachers, salaries will be lower than if standards are high and fewer candidates qualify. By the same token, if salaries and working conditions are made more attractive, more young people will want to become teachers.
- Education-minded parents (mostly but not exclusively from the middle class) have been important in determining the level of financial support for public education. Because parents of school-age children represent a shrinking proportion of U.S. voters, their commitment to public education will become even more important in determining the level of financial support for that enterprise in the future.
- Salaries and working conditions will be more important determinants of teacher supply and quality in the future than they have been in the past. Public education can no longer lay claim to a captive labor force of women and minorities who are denied other opportunities.
- Teachers will increasingly value their ability to control their work environment, both individually and collectively.
- Education-minded parents want professional teaching for their children; teaching that is intellectually honest, practical, and appropriate.

- Professional teaching is made more difficult by most kinds of standardized curricula and testing programs, bureaucratic reporting requirements, and systems of evaluating teachers.
- Increasingly, education-minded parents have the financial resources to choose private education. If they fail to find professional teaching in public education, they will make this choice support for all these premises can be found in Wise and Darling-Hammond 1985; Darling-Hammond and Wise 1985, 1983; Darling-Hammond 1984; Wise and others 1984; Wise 1979.

With these premises in mind, let us examine three possible scenarios for the future of the U.S. teaching profession.

The Business-as-Usual Scenario

In the first scenario, yesterday's practices and today's policies remain in effect. The supply of teachers is running low, and demand is increasing. States and local school districts that lack clearly defined and carefully enforced standards for entry to teaching will lower their entry requirements in order to fill teaching positions. The practices of the 1950s and 1960s will reappear: "Labor Day Specials," "a warm body in every classroom," and "every college grad a teacher," "the breath test," and so on. Indeed, the first signs of the reemergence of these practices are already evident. If standards are not enforced, "emergency," "temporary," and "alternative" certification practices will proliferate.

The appeal of alternative certification is especially strong, in part because certain beliefs are widely shared among policymakers:

- "Education schools are inferior; colleges of liberal arts are superior."
- "Education students are academically weaker; liberal arts students are stronger."
- "We'd be better off allowing—even encouraging—liberal arts graduates to enter teaching."

Exceptional examples are invoked. "Under current procedures, Albert Einstein would not be allowed to teach high school physics. Let's alter our certification procedures so that someone like Einstein could be certified."

So alternative certification is instituted, but who appears at the door of the school employment office? Some highly qualified individuals may find their way into teaching through alternative certification, but many of the new teachers will be recent college graduates who can find no other job. In fact, the wider array of employment opportunities now available to women and members of minority groups virtually guarantees that most of the new teachers will be drawn from these groups.

We need only look back in time to discover the consequences. With flexible standards, any college graduate—conceivably, even someone with no degree—can become a teacher. As long as standards can be relaxed, the supply of teachers is unlimited. An unlimited supply of teachers will depress both wages and prestige. Under these conditions, most teachers will be drawn from groups that have few or no other options.

U.S. policymakers are taking two conflicting approaches to teaching. They have embarked on a highly publicized movement to improve the quality of teachers by testing them at every stage in their careers, but they have also embarked on a less well-publicized movement aimed at relaxing the standards for entry to teaching.

The two movements cannot have independent effects. Some observers may believe that a majority of teachers can be certified and hired by less rigorous procedures. Such an outcome seems unlikely, however. Given the depressing effects of an unlimited teacher supply on wages and prestige, prospective teachers are not likely to invest in extensive preparation for certification. If emergency, temporary, or alternative certification is an available option, their reluctance to make this investment will be reinforced.

The hiring of teachers has never been governed by meaningful standards. Thus, as the preparation for teaching varies more widely, the quality of individual teachers will also vary more widely. Policymakers will respond to growing public dissatisfaction with U.S. education by redoubling their calls for the evaluation of teachers, the testing of students, and the standardization of curricula, teaching methods, and learning objectives. These moves will cause talented individuals to defect from the teaching force.

Education-minded parents with sufficient financial resources will respond to the new crisis in confidence by pulling their children out of the public schools. They will seek professional teaching where they can find it, in private schools that now exist or that will soon be created by entrepreneurs who recognize the existence of a market for such institutions. (In certain cities the middle class has already abandoned the public schools, having judged their educational quality unacceptable.) The ultimate outcome will be a dual educational system: good schools for those who can afford them and mediocre schools for the rest.

The Two-Tiered Scenario

In the second scenario, the structure of the educational system parallels that of the U.S. army during the era of the draft. In the army of that period, a permanent and fairly well-paid cadre of professional officers and noncommissioned officers inducted, trained, and supervised ever-changing contingents of drafted or enlisted recruits, who remained in the army for relatively short periods. This two-tiered model gave officers in the permanent cadre a satisfying career that paid well and provided some prestige. Meanwhile, a combination of conscription and volunteerism—the latter, fueled by patriotism or economic necessity—filled the ranks.

As a teacher shortage looms, many observers are now giving thought to an analogous structure for the teaching force. A permanent cadre of senior teachers, administrators, and supervisors could induct, train, and supervise ever-changing contingents of temporary teachers. The permanent cadre would be composed of trained professionals. The temporary teachers could be hired through one or more of the following four plans:

- The first plan responds to recent calls for a period of mandatory public service for every young adult (or at least for every college graduate). Some young people would choose military service, some, public health service, and some, teaching service.
- The second plan is to have college loan programs grant loan forgiveness to borrowers who teach for a specified number of years after graduation.
- The third plan, based on the putative idealism of young people, calls for a voluntary teaching corps. Before beginning their careers, bright young college graduates would volunteer for temporary teaching service (perhaps with modest starting pay).
- The fourth plan—really a variation of existing practice—would be to pay high salaries on a salary schedule that failed to reward experience. Starting salaries for teachers are only a little lower than starting salaries for other occupations that require a college degree. Because competitive pay increases would not be forthcoming, however, many new teachers would remain in the classroom only temporarily.

Meanwhile, the permanent cadre of career teachers, supervisors, and administrators would generally come to teaching via a different route. They would be young people who had always planned to become teachers. They would be graduates of existing—or of new and upgraded—teacher education programs. Some would be graduates of research universities. Like the graduates of military academies and college Reserve Officer Training Corps programs, they would be slated for leadership. (Some temporary teachers would no doubt cross over to the permanent force, as well, and special training programs would probably emerge to make such transfers easier.)

The major task of the career professionals would be to induct, train, and supervise temporary teachers. Indeed, many of the current proposals for career ladders expect that a permanent

cadre of teachers will rise through the ranks to assume these very duties. The two-tiered model promises to enable the educational system to attract and retain a cadre of professionals by offering a satisfying career and adequate compensation. The model also seems to solve the problem of teacher supply by ensuring a steady flow of temporary teachers. The quality of individual teachers would vary considerably, however, and this fact would not escape parents, policymakers, and the general public. Because a large fraction of the teaching force would be unprepared for teaching, senior teachers, administrators, and supervisors would have to take responsibility for the performance of the temporary teachers. They could exercise this responsibility through standardization, direct supervision, or both.

Ensuring minimum standards of quality through standardization would require a prescribed curriculum, stylized teaching methods, and a testing program to determine what students had learned. Teaching would not be professional; rather, teachers would adhere to a fixed instructional regimen that would fail to meet the needs of many students. Education-minded parents who could afford it would send their children to private schools.

In a two-tiered system, standardization seems a more likely method of quality control than direct supervision. Properly conducted, direct supervision requires that supervisors handle small case loads, since they must have sufficient time to help new teachers plan, conduct, and evaluate instruction. (Well-designed beginning teacher/mentor programs call for a ratio of not more than 10 to 1. For supervision in industry, conventional wisdom suggests a ratio of not more than 7 to 1.) Direct supervision would be compatible with professional teaching in the sense that supervisors could help new teachers learn to make informed judgments about how best to meet students' needs. Direct supervision would be expensive, however, because it is labor intensive. Moreover, in a two-tiered system, direct supervision would probably not be judged cost-effective, since most temporary teachers would not teach long enough to justify the high cost of initial training. Consequently, standardization would probably prevail.

Questions about the cadre of career teachers remain. Would these teachers actually instruct children? Or would they serve only as quasi-administrators, charged with overseeing the efforts of a constantly changing group of new teachers? What percentage of the teaching force would career teachers constitute?

The answers to these questions depend on several factors. Would policymakers be willing to pay high enough salaries and create sufficiently attractive working conditions to entice and retain highly qualified teachers? Or would the view that anyone can teach prevail, depressing salaries, prestige, and willingness to invest in the improvement of working conditions even for career teachers? The job of the career professional would also be shaped in part by the number of temporary teachers inducted each year. What fraction of the temporary force would turn over annually? The answers to these questions are by no means clear, and the questions raise doubts about the efficacy of this two-tiered model for education.[1]

The Professional Scenario

The professional scenario will come about if the states cooperate with education organizations and others to reform the training, induction, and certification of teachers. These reforms might include a bachelor's degree in liberal arts for all prospective teachers, followed by a fifth year of course work in professional education; a well-supervised induction into teaching; and tests of subject-matter and professional knowledge, along with careful evaluation of teaching performance. Clearly defined and strictly enforced standards would govern entry to

1. Consider the situation, for example, if 20 percent of all teaching slots were filled by career personnel. In that event, temporary teachers would have to fill 80 percent of the available positions. In 1987, the total estimated demand for teachers in the United States was 2.5 million according to predications made by the National Center for Education Statistics (1985, p. 144). If temporary teachers taught for three years on average, approximately 679,166 new teachers (1/3 of two million plus 1/40 of 500,000) would have to be hired each year. In 1987, a total of 935,000 bachelor degrees was awarded in all fields according to the National Center for Education Statistics (1985, p. 124).

teacher education programs, to initial teaching jobs, and to career-professional status. Whatever the specifics of the reforms, their purpose would be to inspire public confidence in the quality of those teachers who achieved the status of career professionals. Every other occupation that is considered a profession has a rigorous process of education and certification, which convinces the public that all (or nearly all) of those individuals who complete this process are well-prepared to practice.

One corollary of high and carefully enforced educational and certification standards is a restricted supply of professionals. Not all aspirants survive every stage of the education and certification process, thus entry to the profession is selective. This gives the public greater confidence in the abilities of those who survive the selection process. With regard to teaching, this confidence should translate into greater willingness to pay salaries and provide working conditions that will attract and retain highly qualified professionals.

Increasing teacher salaries is always difficult, however. Political rhetoric suggests that legislatures, governors, and school boards would be ready to pay higher salaries if only they could be convinced that teachers were sufficiently competent to "deserve" more money. Yet the law of supply and demand—not the rule of just deserts—is the most powerful determinant of wages. As the United States faces a growing demand for teachers, the number of individuals who are allowed to enter the teaching force will determine the salary level. Teacher salaries may increase somewhat because standards for entry to the profession have been raised, but salaries will increase a great deal more as the supply of teachers is restricted.

Meanwhile, the creation of working conditions appropriate to a professional conception of teaching will be a gradual process. As the percentage of competent teachers increases, bureaucratic supervision of teachers will be perceived as less necessary. As bureaucratic supervision declines, the teaching profession will become better able to attract and retain highly talented practitioners. A teaching force that sees itself as professional will compel the redesign of working conditions. Moreover, the funds previously used for bureaucratic supervision will now be available for improving the work environment.

The professional scenario would enable teachers to teach in a professional way. Their firm grasp of their subjects would allow them to be true to the intellectual demands of their disciplines. They would be able to analyze accurately the needs of their students. They would know the standards of practice of their profession; they would also know that they are accountable for teaching in accordance with those standards and for meeting their students' needs.

Teachers would no longer have to teach prescribed curricula, using stylized methods, to prepare their students for standardized tests. Instead, they would feel compelled to teach with intellectual honesty and practical foresight. They would teach students to read for knowledge and enjoyment, not simply to acquire testable reading skills. They would teach students to think mathematically, not simply to seek the right answers. They would teach students to write fluently and effectively, not simply to fill in the blanks. In a word, they would teach professionally, as the best teachers have always done when the system allowed it. If the public schools could attract and retain highly qualified teachers, widespread support for the public schools would be restored. Education-minded parents would no longer have to turn to private schools for professional teaching. (The most desirable private schools demand that their faculties engage in professional teaching, and they provide working conditions that foster this kind of teaching, such as small classes that allow teachers to attend to the individual needs of students.) If they remained committed to the public schools, most education-minded parents would constitute a political force that would ensure sufficient financial support to sustain professional teaching.

Which Scenario?

The professional scenario holds the greatest promise for producing professional teaching in the U.S. public schools. If this scenario were to be implemented successfully, the public schools would continue to educate a majority of U.S. youngsters. If salaries and working conditions were

improved and standards for entry to teaching were strengthened and enforced, the teaching profession would attract and retain enough talented individuals to staff the nation's schools.[2]

Whether the professional scenario becomes a reality or not depends on the willingness of policymakers to improve teachers' salaries and working conditions and to establish standards for entry to the teaching profession. It also depends on the courage of policymakers to enforce entry standards in the face of empty classrooms. Salaries for teachers are beginning to improve, but whether working conditions are also improving is not yet certain. Standards for entry to teaching are now being established, but it is not yet clear whether they will be enforced. Failure to attract enough talented people to teaching or failure to hire only teachers who are competent will automatically trigger the business as usual scenario in which schools will be staffed by those who have few other options. One scenario or another will not simply happen. Policymakers will determine the future of teaching by the decisions they make today.

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2. Given a teaching force of 2.5 million and an average teaching career of thirty years, the system would demand approximately 83,300 new teachers a year. If the average teaching career spanned forty years, the system would demand only 62,500 new teachers a year. The National Center for Education Statistics predicted that the United States would need 171,000 new teachers in 1987, however, 142,000 students would graduate from teacher education programs that year (National Center for Education Statistics 1985, p. 144). Of course, the actual demand for new teachers in any given year is a function of many factors, including the age distribution of members of the teaching force.

15

THE CONCERNS OF TEACHERS' UNIONS FOR QUALITY EDUCATION IN DEVELOPING COUNTRIES

Pai Obanya

Teachers' unions exist worldwide at the national level. There are also regional and sub-regional groupings of teachers (for example, the All Africa Teachers' Organization), and teachers' internationals represented by such organizations as the World Confederation of Organizations of the Teaching Profession (WCTOP); the World Confederation of Teachers (WCT); the Federation Internationale Syndicale de l'Énseignment (FISE); and the International Federation of Free Teachers' Unions (IFFTU).

This is not the place to go into the history or ideological orientations of these organizations. What is important here is that teachers' unions are basically trade unions whose major aims are to protect the interests of teachers and to promote cooperation among teachers worldwide. As the secretary general of one of the teachers' internationals said recently, however: "The conditions of teachers and the conditions of teaching are two sides of the same coin."

The purpose of this paper is to discuss the work of teachers' unions as it relates to conditions of teaching. As the title suggests, this will be done with particular reference to the activities of teachers' unions in developing countries.

The Stand of Teachers' Organizations on the Conditions of Teaching

The material and personal welfare of teachers is a major concern of teachers' unions. Like all other citizens, teachers need political freedom, civil liberties, reasonable standards of living, and equitable conditions of employment. These are important concerns to teachers' unions wherever they may be located.

At the same time, teachers are expected to be answerable to questions of moral and professional accountability. For this reason, they are bound to consider quality of education as an important part of their responsibilities. It is difficult to define quality of education, but there can be little controversy about what constitutes its inputs, its processes, and indications of its outcomes For reasons of conciseness, these have been summarized in table 15.1.

As evidenced by the examples that follow, teachers' organizations have shown concern for all the three dimensions of quality education. Work that began in the early 1960s (to which the teachers' internationals all contributed) led to the elaboration of a UNESCO/ILO *Recommendation on the Status of Teachers*, published in 1966. The following are examples of professional concern discussed in the document.

First, the recommendation is based on the guiding principles that "advance in education depends largely on the qualifications and ability of the teaching staff in general and on the human, pedagogical, and technical qualities of individual teachers" and that teaching requires "expert knowledge and specialized skills, acquired and maintained through rigorous and continuing study . . . [and] a sense of personal and corporate responsibility for the education and welfare of the pupils in their charge" (UNESCO 1966).

Table 15.1 Essential Ingredients of Quality Education

Desirable inputs

- Adequate financial resources.
- Minimum physical facilities (space, ventilation/heating, and so forth).
- Minimum instructional facilities (library, audiovisual aids).
- Sufficient numbers of qualified, competent, well-motivated teachers.
- A workable administrative, supervisory, monitoring system.
- An overall environment conducive to learning.

Necessary processes

- Personal attention to the individual learner.
- Stimulating and sustaining learning-to-learn habits in learners.
- Systematic evaluation of the teaching/learning process.
- Resourcefulness on the part of teachers and learners.
- Regular updating of facilities and development of teachers.
- Appropriate activities to develop the affective and psychomotor traits of learners.

Intended outcomes

- *Successful learners*—persons who have learned how to learn and so can use school learning as foundation skills for lifelong learning.
- *Integrated individuals*—persons whose three Hs (the head, the hands, and the heart) have been given adequate nourishment.
- *Productive persons*—school leavers who can think and act creatively and so can contribute to socioeconomic development.
- *A relevant school system*—one that is continuously seeking to be responsive to societal needs.
- *Self-generating teachers*—a corps of teachers learning from experience and continuously improving its knowledge, skills, and so forth.

Second, the recommendation stresses the need for teachers to be well educated and appropriately qualified and to have access to relevant schemes of continuing education:

- The purpose of a teacher preparation program should be to develop in each student his or her general education and personal culture, his or her ability to teach and educate others, an awareness of the principles that underlie good human relations, within and across national boundaries, and a sense of responsibility to contribute both by teaching and by example to social, cultural, and economic progress (para. 19).
- Courses and other appropriate facilities should be so designed as to enable teachers to improve their qualifications, to alter and enlarge their qualifications, to alter or enlarge the scope of their work... and to keep up-to-date with their subject and field of education as regards both content and method (para. 33 [i]).

Third, the recommendation recognizes that teachers and teacher organizations have a responsibility for safeguarding the quality of education. This can be done through (a) participation in the development of new courses, textbooks, and teaching aids; (b) teachers seeking to achieve the highest possible standards in all their professional work; and (c) the

definition and maintenance of "standards relating to teacher performance... with the participation of teachers' organizations" (UNESCO 1966).

What is most remarkable about the recommendation, therefore, is that status is seen as a combination of the personal qualities of the teacher, the quality of teacher education programs, the quality of the service rendered by the teacher, the material rewards accruing to the teacher, the social recognition accorded the teacher, and the psychological satisfaction that a challenging and rewarding profession offers. There is no doubt that these elements combined do increase the social benefits afforded by the work of teachers.

Teachers' organizations everywhere subscribe to the *Recommendation on the Status of Teachers*. They have disseminated it in different forms to their members, and it has been the subject of in-depth examination at numerous workshops.

When teachers' organizations draw up their constitutions, plans for future activities, or make statements on their orientations, they often emphasize their role as promoters and preservers of quality education. Since this paper is concerned with developing countries, we shall cite a few examples from developing countries.

In the five-year targets set in 1986, the Jamaican Teachers' Association (1987) promised to carry out the following professional projects:

- Organize intensive workshops and seminars in specific subject areas.
- Institutionalize orientation programs for teachers accepting their first appointment in the educational system.
- Ensure that only "promising students of good character" are admitted to teacher education programs so as to change the "negative image which exists (in the society) against teachers and teaching."
- Ensure that "all teachers are appropriately educated and trained for the job they perform in the educational system."
- Seek to influence government policy in areas relating to teacher-pupil ratio, the integration of teacher education into the tertiary sector and "a unified and integrated system of secondary education."

A 1971 "modernization seminar" organized by the Singapore Teachers' Union stressed the need for professional orientation among teachers. The seminar identified the following as constituting the essential features of such an orientation:

- Efficiency and responsibility in carrying out tasks and related duties;
- Constantly creating the conditions under which optimum learning should take place;
- Constant evaluation and improvement of pedagogic practices;
- Awareness of the role of education in the overall development of a country;
- Critical appraisal of educational measures;
- Continuous activities to ensure that teachers are working toward the welfare of the individual child and the good of the nation.

In emphasizing the professional orientation of teachers' unions, Singapore teachers would not accept that teaching is a vocation ("some sort of mysterious calling"). To them, teaching "involves clearheaded choice, sound training, and a continuous striving for professional excellence."

The Bangladesh College Teachers' Association (BCTA) has as number one on its list of aims and objectives: "to inspire the teachers with their duties and responsibilities in building the country and the nation, keeping in view the motto 'Salvation lies in the acquisition of knowledge'."

The other professional objectives include proper representation of teachers in bodies "making all educational plans and programs as well as all other activities related to education"; and taking the initiative for the "effective development of literature and culture and for writing and publication of academic books in keeping with the time."

In an editorial comment in a 1965 edition of its journal, the Syndicat National des Enseignants Africains de Haute Volta called on its members to remember that "éduquer veux mieux qu'instruire" (to educate is more important than to instruct). The editorial also suggested ways in which individual teachers could initiate and maintain programs of collaboration with parents, teachers, and the government to ensure the all-round education of every child. It gave hints on how to identify the individual child's learning problems and to seek appropriate solutions jointly with parents. The teacher who regards the upbringing of the child as his primary responsibility was considered to be the only worthwhile member of the union.

The point being made is that teachers' unions in developing countries have shown evidence of commitment to professional issues. Their policy intentions and exhortations to teachers do seek quality education in all its ramifications. Statements of intent are not enough, however, and therefore, we shall now look at actual efforts by teachers' organizations to implement their professional policies.

Professional Activities of Teachers' Unions

In developing countries, the professional activities of teachers' unions fall into two major categories: projects carried out with outside help and projects carried out using entirely the unions' internal resources. The two groups of projects have something in common, however: they are usually initiated by the unions in developing countries themselves. In addition, projects executed with external aid are part and parcel of union strengthening projects of individual teacher organizations.

Projects Executed with External Assistance

External assistance to the professional development program of teachers' unions in developing countries has been of two major types: projects executed by international teachers' unions and those executed bilaterally by fellow teachers' organizations in the industrialized countries.

One area in which there has recently been a tremendous demand for teacher-union-initiated professional development programs is curriculum development. This is because a majority of developing countries are engaged in educational reforms. In those countries in which reform has gone beyond the drawing board stage, curriculum development centers have been set up. These are usually charged with reviewing existing school programs, developing new curriculum objectives and content outlines (in line with emerging national education policies), developing new textbooks and other materials, and evaluating new curriculum projects.

In the committees set up for such work, the teachers' unions are often represented. Reports from a number of unions (for example, the Kenya National Union of Teachers) claim that the involvement has been rewarding. The trend these days is for teachers' unions to seek help in training their members in curriculum development. In Fiji, this request is being made because teachers would like to prove that nationally written textbooks by teams of teachers are more useful than textbooks imported from the United States. In Swaziland, the reason for such a request is that "teachers have to be seen as the key participants in the task of curriculum development and they should not see the national curriculum unit as simply a 'center'" (personal communication with members of the World Confederation of Organizations of the Teaching Profession in Swaziland and Fiji).

Black teachers in the Republic of South Africa have gone so far as to suggest practical alternatives to the government. These they have concretized through a three-phase training program in systematic curriculum development. The first phase took off in March 1987 and involved intensive, political work with practicing teachers nominated by the African Teachers' Association of South Africa on the following topics:

- Analysis of the South African situation and its implications for education and curriculum development;

- Analysis of educational and curriculum reform in independent African countries;
- The process of curriculum development;
- The role of the practicing teacher in curriculum.

This phase continued with practical tasks that participants carried out in their normal places of work between March and September 1987. The results of the practical work were presented at a "report back" workshop in October 1987. What was most remarkable about this was that each participant was able to question existing practice (for example, the absence of black achievements in history textbooks, the absence of materials for primary science, and so forth) and to develop alternative approaches in a systematic way.

The second and third phases of the program from 1988 to 1989 will involve provincial and district workshops. During this period, the original projects of the original core of teachers will continue. These projects also formed the subject matter for advanced curriculum seminars in 1988, 1989, and 1990.

Several lessons have been learned from the South African experience. First, the project has opened the eyes of the participating teachers to the real defects of the present curriculum. Second, it has become easier for the teachers to work in groups and to learn through concrete projects; they have subsequently claimed to use projects more intensively in their own teaching. Third, the debate on alternative education within South Africa is beginning to make sense to more and more teachers as they get drawn into the projects of colleagues who have been trained in curriculum development. Fourth, the participants claim that they have developed greater interest in writing, especially since they have had to write (collectively) their own textbook on curriculum development (World Confederation of Organizations of the Teaching Profession 1987).

Some evaluation has also been built into the South African program. Participants at the first workshop had to express their views on the extent to which they felt the objectives of the workshop had been attained. They also took a thirty-item test based on the content of the workshop discussions and practical activities. At the report back workshop they had to take the achievement test again. It was interesting to see the direction of change in the participants between the two workshops. The range of scores had gone from 13 to 25 to 16 to 30, while the mean score had moved from 19 to 23.

Teachers' unions in Latin America have also been vocal in asking to train their members in the techniques of curriculum development. As a first step in meeting this demand, WCOTP organized a regional workshop on curriculum development in Lima, Peru, in November 1987. Since teachers are expected to practice what they preach, efforts were made to design a course that was adapted to Latin American conditions and was practice-oriented. Thus, a specially designed workbook was used for the workshop (WCOTP 1987). The workbook was divided into "sessions" (not chapters), each of which involved individual, subgroup, and plenary activities. Of the twenty-eight hours covered by the workshop, eighteen were devoted to practical activities.

Because the method and the workbook were being used for the first time by WCOTP, their suitability had to be studied in a systematic manner. Participants had to express their views on the extent to which they were able to master specific topics and what they felt about the method of work. These views are summarized in table 15.2. In subsequent workshops (more intensive activities at the national level), the data in table 15.2 will be used to improve the courses.

Teachers' unions in developing countries have also sought the assistance of colleagues in the industrialized world to organize workshops designed to help teachers analyze educational reforms and to participate more actively in their implementation. A good example of this type of activity is the African Secondary Education Project of the Fédération Internationale des Professeurs de l'Enseignement Secondaire Officiel (FIPESO). This is a joint project with the All Africa Teachers' Organization, which took the initiative in 1980 of urging all its member organizations to become involved in reform of secondary education programs.

Table 15-2. Reactions of Latin American Teachers to WCOTP Workbook and Workshop Methods on Curriculum Development

	Suitability of method of work				*Extent to which specific topics were understood*		
Method characteristic	*Agree entirely*	*Agree partially*	*Disagree*	*Topic*	*Mastered fully*	*Mastered partially*	*Not mastered*
Method inappropriate for adults	2	24	24	Meaning of the term curriculum	34	10	6
Method facilitated mastery	29	19	2	Need for curriculum development	40	10	0
Method boring	0	10	40	Activities involved in curriculum development	18	24	8
Method interesting	41	9	0	Practice in type of work needed in curriculum development	18	30	2
Other faster methods preferable	0	28	12	Teacher contribution to curriculum development	30	10	0
Practical exercises preferable to lectures	28	18	4	Process of curriculum development	28	20	2
Methods meant teachers being used as guinea pigs	2	12	36	Evaluation in curriculum development	30	18	2
				How a curriculum team works	34	14	2

Between 1981 and 1987, seminars under the title "Content and Structure of Secondary Education" were held in Côte d'Ivoire, The Gambia, Ghana, Guinea, Kenya, Niger, Nigeria, and Zambia. The discussions covered such general topics as the nature and process of educational reform, general and vocational secondary education, the role of teachers organizations in educational reform, and international experiences in secondary education development. In addition, government reform documents (for example, Nigeria's 6-3-3-4 and Kenya's 8-4-4 documents) were used as bases for in-depth discussion.

An evaluation carried out at the end of the first phase of the project in 1986 showed that participants and resource persons saw the major achievements of the seminars as arousing the conscience of participants, getting teachers and policymakers to think and work together, and providing opportunities for teachers to exchange ideas and experiences. The major problem was how to ensure "appropriate follow-up" of the seminar recommendations. Resource persons from outside Africa remarked that the seminars enabled them to see African problems from a new perspective and to respect teachers in developing countries for "doing so much with so little" (Itotoh 1986).

Since 1986 there has been more demand for the FIPESO seminars. More African teachers are being used as resource persons. The various teachers' organizations have drawn up plans for follow-up activities. What is more, government officials have participated fully and discussed problems frankly with practicing teachers during the course of these seminars.

Updating of teachers' qualifications, knowledge, and practical skills has also been an area of concern among teachers' unions in the industrialized world and their counterparts in developing countries. The Canadian Teachers' Federation (CTF) is one organization that has been heavily involved in this type of activity.

Under the title Project Overseas, the CTF program began in the early 1960s on an experimental basis in a couple of countries. It has since grown to cover Africa, Asia, the Caribbean, and South America. Now known as "CTF's International Development Assistance Programme" its objectives are:

- To help teachers in developing countries to upgrade their competence through in-service courses;
- To help overseas teachers' organizations to improve and strengthen their structures and activities;
- To promote understanding and goodwill among teachers.

Reports from CTF show that in 1986, courses relating to teacher improvement were held in eleven countries in Africa, two in Asia, and four in the Caribbean. The variety of areas emphasized in these programs can be seen in table 15.3.

Table 15.3 Range of Objectives of CTF Teacher Development Courses in Developing Countries

Region	Basic subject matter knowledge, including preparation for national exams	General knowledge	Basic Pedagogy	Update of subject knowledge	Exposure to new teaching strategies	Other essential skills [a]
Africa	3	-	3	3	5	6
Asia	2	-	1	-	2	-
Caribbean	2	1	1	1	4	1
Total	7 (20%)	1 (3%)	5 (14%)	4 (11%)	11 (31%)	7 (20%)

a. Skills include counseling, supervision, and evaluation.

According to table 15.3, the greatest emphasis was on demonstrating new teaching strategies to practicing teachers. This is followed by basic subject matter knowledge and training in other essential functions associated with teaching (counseling, evaluation, and supervision). The objectives of the training program also tend to reflect the special needs of the teachers' unions in the host country.

An idea of the number of teachers in developing countries benefiting annually from these professional programs can be seen from the following figures from a 1986 report of the CTF. Participants in 17 countries were asked to rate the year's program as excellent, good, or fair: 471 (47 percent) rated the programs as excellent, 518 (52 percent) as good, and 12 (1 percent) as fair. This implies a total of 1,001 teachers, and it is likely that the figure is higher, since some of the participants would have made no responses at all.

The figures also indicate that participants were generally satisfied with the programs. This is confirmed by statements of appreciation for "the practicality" of the course, the use of local materials and the local environment, and a realization that "teachers can make things happen." The Canadian resource persons were also delighted by the enthusiasm of participants, the zeal of local resource persons, and the cordiality of Ministry of Education officials. Problems faced in running the program in the field all related to underdevelopment (transportation, communication, lack of facilities, and so forth); but they also confirm the extent to which teachers in developing countries are expected to do so much with so little.

Projects Executed Entirely with Internal Resources

Teachers' unions in developing countries also have a variety of educational programs initiated, planned, financed, and executed through their own internal resources. Such programs fall into three main categories: conferences/studies devoted to what teachers can do to help improve the educational system, to make government programs work, or to offer alternative programs to government; in-service courses for the upgrading of teachers' professional skills; and publications designed to make new ideas on pedagogy accessible to the practicing teacher.

The first type of project is easiest to organize. Its impact is usually determined by the extent to which the topics are relevant to ongoing educational debates and the depth of treatment. This type of project tends to be more frequent (and pursued with greater intensity) in regions where educational reform has been slow. Latin America is a good example of a region where there are vocal pressure groups on the need for faster educational reform and where *seminarios pedagogicos* have become commonplace among teachers' unions.

In Peru, for example, the Sindicato Unico de Trabajadores en la Educación del Perú (SUTEP) organized one such conference in 1986. The conference brought together practicing teachers, members of different pressure groups, researchers, and politicians to examine the why, the how, and the what of "popular" education. Papers were presented on such topics as politics and education, determining local and national educational needs, practical experiences of "popular" education, outlines of an alternative education system, and education and productive work. Each presentation was followed by in-depth panel discussions. The national interest aroused by the conference encouraged SUTEP to publish the proceedings, and this has become an important work of reference as well as for general and professional reading material. (SUTEP 1986)

The second type of program (that is, in-service professional courses for teachers) is popular with teachers' organizations in developing countries, and the beneficiaries of such programs vary according to the needs and capabilities of each union. The Syndicat National des Enseignants Africains de Haute-Volta (SNEAHV), for example, took the initiative in the 1960s to train its members to teach French as a second language at the primary level. Before then, French had been taught in schools as if it were the learner's first language. At the first in a series of vacation courses held in 1965, the secretary general of SNEAHV emphasized that they had pressured the government for a long time to organize courses of this nature. He saw the inauguration of the course as indicative of *maturite syndicale*, and he was happy that both tutors and participants were volunteers (Lankoande 1965).

Some of the teachers' unions publish reports of professional activities at the statutory annual general meetings. Such reports not only catalog the activities undertaken, but also give a critical account and appraisal of the content and conduct of professional training programs. Thus, in a 1981 report, the Kenya National Union of Teachers (KNUT) spoke of the steady rise in the number of participants (from 52 in 1973 to 182 in 1981), the diversity of activities (basic subject knowledge, pedagogy, and so forth), and the high quality of handouts.

The report also deplored the fact that very few women teachers participated in in-service courses. Some teachers felt that in-service courses were unnecessary for qualified teachers and showed little interest in what was going on. Participants also called for arts and physical education to feature in future in-service courses, while the course director would have liked to have seen the proceedings of the courses produced as a permanent record (Lubulellah 1981).

In Singapore, the teachers' union has had a committee on professional activities and professional research since the 1970s. The two committees were merged into a Professional Research and Activities Committee in 1982. Available reports on the professional activities claim that they have become "more ambitious... covered new areas of current interest... and involved a very comprehensive and professional research on the status of education that took a long time to complete." The reports also claim that the Singapore Teachers' Union has succeeded in "widening its interest beyond the narrow boundaries of pay and work conditions" (Hun 1983; Lowe 1981).

Singapore is, in fact, a good example of active teacher union involvement in the professional improvement of teachers and concern for quality education. The range of this involvement is summarized in table 15.4.

Finally, teachers' unions in developing countries have used their journals to express teachers' views on educational issues, to announce new teaching-learning facilities, and to publish didactic articles for a teacher readership. The articles are written by all sorts of persons: university teachers, educational administrators, and practicing teachers.

One advantage of didactic articles being written by practicing teachers is that they are down-to-earth. Teachers are able to cite their personal experiences; other teachers, therefore, have the opportunity of trying out ideas and possibly giving feedback. Often, however, the teachers' union journal is appropriated by university teachers who have other reasons for writing. Such writings either report research (in a language that is unfamiliar to the teacher) or reproduce the writers' earlier term papers (full of quotations, footnotes, and references), which again does not satisfy the reading needs of the practicing teacher.

Table 15-4. Extent of Singapore Teachers' Involvement in Quality Education Programs

Activity	*Objectives*	*Audience*	*Methods/resources*
Seminar on applied testing in the classroom	To help teachers understand and use various testing techniques	Experienced teachers	In collaboration with local university
Professional talks and discussions: • reading and the mass media • assessment of teaching	To bring teachers face-to-face with research workers in subjects related to teaching		Visiting university lecturers from other countries
'O' level courses in various school subjects	To help members of the union improve their 'O' level grades	Teachers with low academic qualifications	Experienced practicing teachers
Educational tours	To acquaint teachers with innovative ideas	Mid-career teachers	Hosted by a friendly teachers' union 15-day tour of New Zealand for 15 teachers, including attendance at a lecture on "teaching English as a second language"
Research	To draw up a profile of a teacher's working day	The total population of teachers	Questionnaire survey involving 488 teachers
Curriculum enrichment programs	To develop and try out curricula and teaching materials to make school programs more interesting	Children of union members; later extended to other children	A group of principals, vice-principals, and teachers
Leadership in school management	• To help school administrators analyze and solve their day-to-day problems • To improve school administrator's interpersonal skills	Principals and vice-principals	Experienced principals and ministry officials

Policy Implications

This discussion has shown the extent to which teachers' unions in developing countries have broadened their interests and activities beyond the narrow issues of pay and work conditions and the extent to which they have demonstrated that the conditions of teachers and the conditions of teaching are two sides of the same coin. This is a type of orientation that can be drawn upon for the creation of educational policy.

First, policy guidelines have to recognize the duty (not simply the need) for teachers' unions to become involved. Governments in developing countries will have to think of involvement as mutual consultation, adequate consideration of teachers' views, full participation of teachers' unions in explaining policy guidelines to the wider public, and the commitment of teachers' unions to the implementation of new educational policies.

It is a cliché that many ambitious policies on education have never got off the ground because of a lack of teacher commitment. Teacher commitment need not be seen as something that can happen only "on the ground." It is easier to proceed if the teachers' involvement (through their own chosen representatives) is seen as an essential ingredient in different phases of policy formulation.

Second, even though quantitative growth is often stressed in the educational plans of developing countries, the major problem seems to be that of quality. Achieving the objectives of quality education while resources are scarce is a problem. The commitment of teachers' unions (obtained through their close understanding of government priorities) can be useful in ensuring that teachers contribute their best to bringing about quality education. There is no doubt that a great deal of the process elements (see table 15.1) in quality education take place within the

school and the classroom. These are educational locales in which teachers can exercise much influence, an influence that surely has its impact on what comes out of an educational program.

Third, the examples cited earlier in this discussion have shown that teachers can help fellow teachers. There are the good examples from The Gambia and Ghana where cooperation between the Canadian Teachers' Federation (CTF) and local teachers' unions has resulted in the organization of teacher upgrading programs, leading to the award of nationally recognized teacher diplomas. Cost savings have been possible in a number of ways. The teachers being upgraded remain on their jobs, and so no work hours are lost in releasing them for upgrading programs. Then, since the upgrading programs embody projects that are related to the teachers' daily activities, the possibility of the teachers using their new knowledge to improve their teaching is higher. In addition, there is no problem of adapting to new working conditions after training, as would have been the case if the teachers concerned had been awarded scholarships to go elsewhere.

Fourth, governments in developing countries can benefit from the resources (financial, material, and human) of the foreign friends of their national teacher organizations. One important aspect of international solidarity among teachers is the commitment of teachers in wealthier countries to helping their colleagues in poorer countries.

This is an area that would be worth looking into, because it does not involve borrowing (and subsequent indebtedness) on the part of the country receiving aid. It is also easier to set in motion because it involves simply teachers talking things over with fellow teachers.

Conclusions

The first part of this discussion showed that teachers' unions are as committed to the development of education as they are to ensuring the social welfare of their members. Teachers' unions in developing countries are no different from their counterparts elsewhere in the level of this commitment.

In the second part of the discussion I offered concrete evidence of the activities of teachers' unions in developing countries geared toward national educational development. While the list here has not been exhaustive, it has shown the main thrust of teachers' unions.

In the third part, I outlined the policy issues that can be tackled if the resources of teachers' unions in developing countries (and those of their friends in the industrialized countries) are harnessed. What is needed here is for educational policymaking to find appropriate ways of persuading teachers' unions to become committed to policy issues, especially when radical changes to existing policies (dictated by present-day economic realities) are necessary.

On the one hand, teachers' unions are not perfect and have not achieved total success in what they have sought to do. On the other hand, there is in teachers' unions a source of help for the development of education, which ought to be studied and exploited.

An important observation from available reports is that the ability of each union to initiate and execute pedagogic activities is closely related to what has been called *maturite syndicale*. In other words, the stronger the union, the greater the chances of its making an adequate contribution to educational development and to the continuous improvement of the professional skills of its members.

For a union to be strong, it requires, first and foremost, a suitable political and social climate in which to function. This implies existing in a society that allows freedom of association, of thought, and of expression. Second, teacher education has to be accorded a high level of priority so that graduates of teachers' colleges are sufficiently well educated and informed to be able to analyze educational problems and to join government in seeking solutions to them. Third, teaching needs to receive adequate social recognition, and this includes authorities recognizing the professionalism of teachers and using it in matters concerning educational development. Fourth, teachers unions need financial and material support from the authorities, especially as a means of making them self-sufficient in the organization of professional and other activities.

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